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SOME PROBLEMS IN THE MAJOR SURGERY OF THE KIDNEYS; WITH A REPORT OF CASES.*

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A DETAILED consideration of all the problems connected with the surgery of the kidneys is out of the question in such a short paper as I am expected to give you. For this reason I have decided to confine myself to some of the problems connected with the treatment alone, ignoring as far as possible the etiology and diagnosis. I have therefore selected a certain number of my cases which seem to possess interest in regard to some of the questions arising in the major surgery of the kidney. One of the most important is that of nephrotomy or nephrectomy in suppurative conditions and in advanced calculous diseases of the kidneys.

Under this category may be placed: (1) pyonephrosis; (2) infected hydronephrosis; (3) pyelonephritis; (4) calculous disease with suppuration.

Cases of discrete abscess formation and perirenal abscess will not be considered as there is no question as to their proper treatment by incision or excision of the affected part. For a similar reason tuberculosis of the kidney is omitted, its treatment being generally conceded to be extirpation.

The question of the choice of nephrectomy or nephrotomy in pyonephrosis, pyelonephritis and infected hydronephrosis was most admirably discussed before this section last year by Dr. A. B. Johnson, in a paper entitled "Operative Treatment in Certain Suppurative Conditions of the Kidneys."† My experience in these diseases is to a large degree corroborative of Dr. Johnson's views and my cases are reported simply in the light of affording additional evidence.

In regard to pyonephrosis, Johnson's conclusions are that primary nephrectomy is the safest operation, and that nephrotomy gives a much higher mortality and a far less number of cures. Israel's‡ statistics for pyonephrosis in 19 cases operated upon are as follows: 13 cases treated by primary nephrectomy, cures 70 per cent., mortality 23 per cent.; 6 cases treated by nephrotomy, no cures, mortality 40 per cent., two of these cases of nephrotomy were treated by secondary nephrectomy with a mortality of 50 per cent., and one treated by an operation for the remaining

fistula resulted in a cure. Both Johnson and Israel found that a toxic nephritis present in the other kidney was benefited by the removal of the pyonephrotic kidney. In acute pyelonephritis Johnson advises nephrectomy. In infected hydronephrosis he states that nephrotomy is the operation of choice. In the latter cases I am inclined to differ slightly from him in that I should put nephrectomy as the operation of choice and reserve nephrotomy for the cases in which there was good ground to believe that a cure could be thereby accomplished, to cases in which there was still remaining a considerable amount of renal parenchyma and to cases in which nephrectomy would be a too dangerous procedure.

The mortality of nephrectomy and nephrotomy is less in hydronephrosis than pyonephrosis; (1) because the patients are in better condition; (2) because the secreting tissue of the affected kidney is generally atrophied and there is consequently compensatory hypertrophy of the opposite kidney; and thirdly because the disease is as a rule unilateral.

Israel's statistics for hydronephrosis are with primary nephrectomy, cures 80 per cent., mortality 20 per cent.; with conservative operations (*i.e.*, nephrotomy, nephropexy and plastic operations on the pelvis or ureter) cures 37.5 per cent., mortality 10 per cent. In a large percentage, 45 per cent., nephrectomy had to be done in order to effect a cure.

Pyonephrosis.—I have performed nephrectomy four times for pyonephrosis. In two the operation was primary both resulting in rapid cures; in the other two nephrotomy had been previously performed, in one by myself in the other by another surgeon who had also attempted the removal of the kidney but failed. One of these recovered the other died. I have performed nephrotomy only once for pyonephrosis with the result that I eventually had to remove the kidney. The cases are as follows:

Left Pyonephrosis; Ascending Gonorrhreal Infection; Secondary Calculus Formation. Nephrotomy and Extraction of Calculi. Persistence of Symptoms and Urinary Fistula. Nephrectomy. Cure.

Case 1.—F. L. B., butcher, thirty-five years of age, American. Admitted to The Roosevelt Hospital August 2, 1900. Previous history, gonorrhea fifteen years before admission, followed by cystitis from which he suffered to a more or less degree to the time of admission. For five years pain in left lumbar region of a steady numb character with paroxysms in which the pain extended downward to bladder. The pain was increased by exertion. The urine at times contained blood. Loss of flesh and night-sweats for several months before admission.

* Read before the Genito-Urinary Section of the New York Academy of Medicine, Dec. 17, 1902.

† MEDICAL NEWS, May 3, 1902, p. 832.

‡ Chirurgische Klinik der Nierenkrankheiten; James Israel, Berlin, 1901.

General Condition.—Spare, large frame, only fairly nourished. Heart action strong, mitral valve insufficient. Lungs negative. The left kidney formed a mass filling the lumbar region extending down to the crest of the ilium and forward to the parasternal line. Deep pressure just to left of the umbilicus caused pain referred to bladder. The right kidney was not palpable. By rectal examination the left lobe of the prostate was found slightly enlarged, the seminal vesicles normal.

The urine was acid in reaction, the specific gravity 1.030, it contained a large quantity of pus and some blood and albumin. The temperature was slightly irregular.

Nephrotomy, Aug. 7, 1900.—Eight-inch incision to a point 1½ inches in front of the spinous process of the ilium. The kidney was much enlarged and exhibited numerous soft fluctuating areas. Calculi could be felt in the pelvis. A long incision was made in the kidney and numerous cavities were explored and the dividing walls broken through. Pus of different colors and consistency was found in the cavities, in all about 20 ounces. A considerable amount of soft friable calculous débris and several fair-sized phosphatic calculi were evacuated. All the septa, in so far as was possible, were broken down and large drains were inserted.

The operation consumed an hour and a half and was attended with some shock. The hemorrhage was moderate. The result of the operation was fairly satisfactory at first and there was general and local improvement and he was discharged improved Sept. 16, 1900. The sinus, however, did not heal and he soon began to suffer from pain and an increase of pus in the urine. He was readmitted Oct. 15, 1900. Nephrectomy, Oct. 23, 1900. The kidney was not as large as at the first operation but contained several abscess cavities which did not communicate with the pelvis and some that did. The operation was twenty minutes shorter than the first one although it was very difficult on account of dense adhesions. There was considerable hemorrhage and the peritoneum was torn. Healing was uneventful and there was an immediate disappearance of pus in the urine. Discharged cured Dec. 7, 1900.

Left Pyonephrosis; Ascending Gonorrhreal Infection. Nephrotomy; Persistence of Urinary Fistula. Partial Nephrectomy; Persistence of Urinary and Purulent Discharge. Nephrectomy; Death.

Case II.—E. J., locomotive fireman, thirty-four years of age; Canadian. Admitted to the Roosevelt Hospital August 30, 1900. Family history negative. Moderate use of alcohol. Two years before admission he had an attack of gonorrhœa followed by rheumatism and what was said to be a distended colon. Shortly afterward he noticed a swelling in the left loin which increased in size. Nephrotomy was performed in Buffalo and a large quantity of pus was evacuated. The sinus persisting, nephrectomy was attempted and a portion of the kidney removed, which later

was proven to have been the lower pole, the upper pole and pelvis having been left; the operation having been interrupted by the bad condition of the patient. Six months later he was admitted to my service complaining of a constant discharge of pus and urine from the sinus and inability to work.

General Condition.—Large and muscular, well nourished, had evidently had a magnificent physique. Heart and lungs negative. In the left lumbar region there was a large scar, in the center of which was a sinus five inches deep discharging pus and evidently the major portion of urine secreted by the kidney. An attempt at cystoscopy was ineffectual on account of a stricture of 14°F.

Nephrectomy, Sep. 12, 1900.—The sinus and surrounding scar tissue was removed with the kidney. The vessels and ureter were imbedded in scar tissue; the adhesions were of the densest kind; the upper part of the kidney which was all there was remaining with exception of the pelvis was several inches above the free border of the ribs adhering strongly to the diaphragm and was only recognized and removed with the greatest difficulty.

The vessels could not be isolated and were clamped, the clamps being left in situ. The peritoneum was extensively opened during the operation but was carefully protected by packing and closed at the end of the operation. The operation was prolonged and attended with much hemorrhage and shock. There was a good reaction and little temperature for the first thirty-six hours, but peritonitis developed on the third day. Although the abdomen was opened and thorough lavage and drainage employed he died on the fifth day.

Right Pyonephrosis in a Displaced Kidney. Ascending Infection; Chronic Cystitis. Primary Abdominal Nephrectomy. Cure.

Case III.—A. I., housewife, sixty-four years of age. Admitted to the Roosevelt Hospital June 4, 1902. Previous history. Two children. Always enjoyed good health until the last four years, during which time she has had slightly painful and frequent micturition. For two years has had attacks of pain in the right half of the abdomen which had been diagnosed as appendicitis. Was also told she had a movable kidney. In the last six months there has been more pain in the right side and increased frequency of urination. She has been under treatment for cystitis by irrigation. Has lost weight and strength.

General Condition.—Poorly nourished and anemic; small frame. Heart and lungs negative. In the right side of the abdomen a tender mass of somewhat irregular outline and surface could be felt extending from the free border of the ribs to the spine of the ilium and from the mammary to the axillary line. It was only slightly movable and did not move with respiration. It percussed behind the ascending colon. The lower pole of the left kidney was palpable but it was apparently not enlarged. The urine

was acid, its specific gravity was 1.014, and it contained a trace of albumin and considerable pus. Cystoscopic examination showed very slight cystitis but redness and tumefaction about the opening of the right ureter. A satisfactory catheterization of the ureters was not obtained. A radiograph gave no evidence of calculus but resulted in a severe burn which, however, did not develop until a week after the operation.

Nephrectomy, June 23, 1902.—The abdominal route was selected on account of the position of the kidney and the incision, five inches in length, was made in the lateral border of the right rectus muscle. The ascending colon was lifted from the kidney and drawn in. The kidney was densely adhered to the colon, mesocolon and peritoneum and in separating them the mesocolon was torn in several places, some of the vessels being injured. The fatty capsule was to a large extent unrecognizable. The vessels and ureter were separately ligated and the stump drained through a stab wound in the loin. The peritoneum and abdominal wound were closed. There was little or no shock and no fever following the operation. Healing took place by first intention, although from the X-ray burn she lost the skin over an area of about four by five inches immediately about the wound. She has wholly regained her health and strength although she still has a slight cystitis. The kidney contained several sacculations of pus and there was advanced fatty and amyloaceous degeneration, there being very little secreting substance left. During the operation the left kidney was palpated thoroughly and seemed normal.

Pyonephrosis and Acute Pyelonephritis; Probable Ureteral Stricture. Mode of Infection not Ascertained. Primary Nephrectomy. Cure.

Case IV.—H. T., male, twenty years of age; American. Admitted to the Roosevelt Hospital August 6, 1902. No history could be obtained in this case that threw any light on the manner of infection and the case is further peculiar in that there were no symptoms referable to the kidney until the day before his admission when immediately after the noon meal he had sharp, shooting pains in the right lumbar and iliac regions attended by vomiting and sweating and a frequent desire to urinate. Small quantities of urine were passed at a time and there was scalding pain in the urethra. No blood was passed. On admission he was in good general condition, the temperature was 101.6° F., and the pulse 100. Heart and lungs were normal. There was no distention of the abdomen. The right rectus and quadratus were rigid, precluding the palpation of any mass in the region of the kidney. There was marked tenderness over the region of the appendix and right kidney. The left kidney was not palpable. The urine was alkaline, its specific gravity 1.030, and it contained only a few pus cells. His temperature varied from 99° to 102.6° F. until August 8, when it shot up to 106° F. No tubercle bacilli were found in his sputum and no malarial organisms in his blood.

On the day of admission the leucocytes numbered 8,000; on August 8, 9,000.

Nephrectomy, August 9. Under anesthesia a mass was felt like an enlarged kidney. An incision three inches in length was made through the outer part of the right rectus sheath. The mass was found to be the kidney. The other kidney was palpated and seemed normal. A transverse lumbar incision was then made and the kidney removed. There were moderate soft adhesions. There was no pus about it. The ureter was grayish, it was filled with pus and appeared to be gangrenous. It was not sounded. The kidney was large, it contained numerous cavities filled with pus and there were scattering foci of pus throughout the parenchyma which had not atrophied to any great extent. The wound was closed with drainage. There was very little disturbance from the operation. The temperature varied under 101° F. for four days and then became normal. He was discharged with a superficial granulating area on Sept. 12. The urine was then normal. A histological examination of the ureter in this case revealed chronic hypertrophic inflammation.

In the two latter cases there is no question of the propriety of nephrectomy. In the first two cases nephrotomy was unavailing and increased the danger of the radical operation, which later had to be done. As Johnson states, in order to perform a nephrotomy in pyonephrosis as it should be done, the kidney has to be exposed to practically the same extent as for removal. This leads to the formation of dense adhesions which often render a subsequent nephrectomy an almost impossible undertaking. The first and second cases illustrate this point well; the nephrectomy in the second case was one of the most difficult operations I have ever undertaken and it is the only case of nephrectomy I have lost in ten done for various lesions.

Besides rendering subsequent operations more dangerous we must remember that nephrotomy alone for pyonephrosis seldom if ever results in a permanent cure and that its primary mortality is nearly twice as great as that of nephrectomy. We must conclude, therefore, that nephrotomy is only indicated in exceptional cases.

Hydronephrosis.—I have performed nephrotomy once and nephrectomy twice for hydronephrosis.

Infected Hydronephrosis in Movable Kidney. Hematogenous Infection. Nephrotomy: Persistent Urinary Sinus.

Case V.—O. B., widow, fifty years of age. Two children, the youngest twenty-eight years of age. Admitted to the Roosevelt Hospital August 17, 1900. Has had symptoms referable to the left kidney for thirty years, consisting of attacks of pain occurring every six weeks to three months. Two years before admission she had hematuria for two days. Three months before admission shortly after an attack of influenza she had a violent attack of pain, accompanied by chills, fever and sweating. At the same time pus

appeared in the urine. She gradually recovered from this and in six weeks she was up and about. Since then the urine had contained pus. Three days before admission she had another similar attack in which I saw her. The urine at the beginning of this attack contained little pus but later it was present in large quantities. Immediate operation was advised but was not consented to. Finally, as she continued to grow worse, operation was agreed upon and I took her to the hospital.

General Condition.—Poorly nourished, skin sallow. Temperature ranging between 101° and 103° F. Heart action poor, slight systolic murmur at apex. Lungs normal. There was slight abdominal distention; the muscles of the left side were rigid and a large indistinct tender mass could be felt extending upward from the crest of the ilium; dulness over it reaching to the angle of the scapula. The mass extended inward to beyond the mammary line.

Nephrotomy. An incision four inches in length was made parallel to the twelfth rib. There was extensive perirenal inflammation. On incising the kidney about three pints of urine and pus escaped. A sound passed into the kidney passed downward for eight inches and also upward for a considerable distance in a continuous sac. A large drain was inserted. There was little shock. The sinus gradually contracted but all the urine secreted by the kidney escaped from it, and it has been impossible to get instrument through the ureter from above, and fluids only in the smallest amounts. She has refused to entertain any further operation although she has to continually wear a tube in order to prevent retention and consequent pain. The urine from this kidney compared with that passed from the bladder is much less in specific gravity and contains on an average one-quarter of the amount of urea. It now contains very few pus cells.

In this case there may possibly be a stricture of the ureter but more probably there is a kink or a valve formation. A plastic operation or perhaps, in view of the diminished secretory power of the kidney a nephrectomy should be done.

In this case nephrotomy was the proper operation in view of the condition of the patient, the size of the kidney and the fact that the fixation of the kidney by the operation might obviate a possible kinking of the ureter.

Infected Hydronephrosis (left); Probable Stricture of Ureter from Gonorrhœal Infection. Origin of late Infection not Determined. Primary Nephrectomy. Cure.

Case VI.—S. K., Hungarian musician; forty-seven years of age. Admitted to the Roosevelt Hospital October 16, 1902. Syphilis twenty years previously. Gonorrhœa ten to fifteen times, the last attack occurring four years before admission. Two years before admission he had an attack of pain following a cold bath, which lasted for five weeks. The pain was localized in the left lumbar region and was paroxysmal. The paroxysms were attended by sweating but there

were no chills or fever. Eleven months before admission he had a similar attack lasting for four weeks, at the end of which time he returned to work but continued to have discomfort until three weeks before he came to the hospital. There had been no disturbances of urination. The urine had never contained blood but had been cloudy and thick for a long time. On admission his general condition was good. Temperature 98.8° F.; pulse 88. The heart was normal. In the lungs were evidences of bronchitis and he complained of cough. The abdominal wall was very fat and thick and the kidneys were not palpable or tender. The urine was acid, specific gravity 1.018, and it contained much pus, varying from 8 per cent. to 18 per cent. of the total bulk after being centrifuged for fifteen minutes.

Before his admission the ureters were catheterised by Dr. F. T. Brown. The urine from the right kidney was found to be practically normal while that from the left contained very large quantities of pus and only one-third as much urea.

Nephrectomy, October 23, 1902. The kidney was removed through an eight-inch transverse incision. It was distended with pus and was nearly eight inches in length. It was very adherent and in places the fatty capsule was removed with it. The pedicle contained a mass of enlarged lymph nodes rendering the isolation of the vessels extremely difficult and consequently the ureter was included in the ligatures and was not explored, but the upper portion was seen to be dilated. The kidney was a large single sac with extremely thin walls, the parenchyma having been almost totally destroyed.

Although the operation was long, consuming nearly an hour and a half, it was attended with little hemorrhage and no shock, and convalescence was uneventful, the patient leaving the hospital on November 17 in perfect general health, just a month after his admission.

After operation the urine was of the same specific gravity as before and on leaving the hospital it still contained very small quantities of pus.

Left hydronephrosis; stricture of ureter; hemorrhage. Primary nephrectomy. Cure.

Case VII.—P. L., Italian, laborer, twenty-eight years of age. Admitted to the Roosevelt Hospital July 9, 1902. The previous history was entirely negative. For three years he had had intermittent attacks of pain in the left lumbar region shooting down the course of the ureter. Some of the attacks had lasted twenty days. For five weeks the pain had been very severe and paroxysmal and after each attack he had noticed mixed blood in the urine. There had been no disturbances of micturition. On admission, general condition very good. Temperature normal. Heart and lungs normal.

A mass varying in size was felt in the left lumbar region, at times being scarcely palpable, at others reaching nearly to the crest of the ilium. There was no rigidity of the overlying muscles but considerable deep tenderness. The right kid-

ney was palpable but seemed to be normal in size and was not tender. The urine was alkaline, specific gravity 1.030; it contained a few red blood cells.

Nephrectomy, July 1, 1902. The kidney was removed by a transverse lumbar incision eight inches long. It was only slightly adherent. The kidney and pelvis were much distended, the walls were thinned and in removing it it was ruptured, a quantity of brownish urine escaping. Its length before it ruptured was estimated to be nine inches.

A sound passed into the ureter was arrested just beyond the pelvic brim and an attempt to inject water through the stricture in appreciable quantities was ineffectual. The operation was not difficult and was not attended by hemorrhage or shock. Convalescence was uneventful. The urine after the operation was normal in quantity and character.

Manifestly these cases are too few in number to enable us to draw any deductions as to the treatment of hydronephrosis. Since hydronephrosis is essentially a distention of the kidney from obstruction, nephrotomy alone will seldom effect a cure unless at the same time the obstruction is removed.

Nephrotomy is indicated in certain cases of infected hydronephrosis in order to pave the way by removing the infection for a curative operation. Sometimes, if the obstruction is due to kinking of the ureter from abnormal mobility or displacement of the kidney, the fixation of the kidney in proper position can be accomplished at the same time. However, in the greater number of cases the cure has to be left to a subsequent operation.

Plastic operations on the pelvis and ureter have been attended with very little mortality and with a large measure of success. The choice of an operation in these cases will largely depend upon an accurate diagnosis of the cause of obstruction and a judicious estimation of the economic value of the distended kidney to the individual. It seems to me that we should bear in mind that an old hydronephrotic kidney does not regain its usefulness when the obstruction is removed and that it always is a diseased member and liable to accidents. Furthermore in proper hands at the present time nephrectomy should not give a mortality of 20 per cent. I should be inclined to put it under 10 per cent. Yet nephrotomy even if ineffectual should be nearly devoid of at least immediate mortality, inasmuch as it is the simple incision of a single cavity and not the formidable operation that it is when done for pyonephrosis.

In the two cases of nephrectomy for hydronephrosis under consideration, cure could have been obtained otherwise only by doing a nephrotomy first and then doing a subsequent reimplantation of the ureter into the bladder to overcome the low stricture.

Taking into account the double character of the operations and not only the risks of failure but also the subsequent danger of accident, it

seems to me they are much better off without their worthless kidneys.

Pyelonephritis.—I have had under my observation only one case of acute pyelonephritis which I have treated by operation. Some of the cases I have observed have occurred in septicemia and have been simply a part of the general infection; others have occurred after operations done as a rule for obstruction upon the genito-urinary tract. These latter represent as a rule the ascending type of infection. In most of these no further operative procedure was indicated.

One case, however, came under my observation in the Roosevelt Hospital not long ago and was overlooked because the urine was not examined. This case was an alcoholic with hypertrophic cirrhosis of the liver, who was operated upon for deep urethral strictures with absolute retention of urine. Soon after the perineal drain was removed he developed fever, acute delirium and increasing jaundice with tenderness in the right hypochondrium. His symptoms were attributed to alcoholism and the cirrhosis of the liver. The urine was all lost until finally a specimen was collected by holding a catheter in the bladder. This specimen showed the characteristic signs of acute suppuration of the kidney, but it was too late, the patient being already moribund. On autopsy evidences of acute septicemia were found and well-marked acute pyelonephritis of the right kidney. The left kidney only showed signs of toxic nephritis. I believe that the right kidney should have been removed in this case, inasmuch as it was the cause of his general sepsis. The outcome might have been the same but he would have been given the chance without which his case was hopeless. In this case the affection was unilateral. In looking over the reported cases of pyelonephritis one is struck with the great frequency in which the disease occurs on one side only. In seven of Israel's eleven cases one kidney only was affected.

The apparent frequency may, however, be due to the greater number of cases of unilateral disease reported, inasmuch as they are better fitted for operation.

The danger of nephrectomy for single pyelonephritis is not so great as is generally supposed, since the operation can be easily and quickly performed. The resulting improvement is sometimes wonderfully rapid and satisfactory as the following case shows:

Acute Pyelonephritis (right). Hematogenous Infection, Puerpural Sepsis. Nephrectomy. Cure.

Case VIII.—H. S., housewife, twenty-three years of age. Finn. Admitted to the Roosevelt Hospital July 14, 1902.

Previous history negative. Six weeks before admission she had a miscarriage at six and a half months. In a few days puerpural sepsis developed. At the end of the second week of her puerperium she complained of pain and tenderness in the right flank. Her condition became more septic while at the same time the signs of uterine inflammation cleared up. In the four weeks be-

tween the onset of the kidney trouble and her admission her temperature ranged between 99° and 106°F., and was accompanied by chills. One week before admission a mass was felt in the region of the right kidney. The urine contained only a few pus cells. On admission, her general condition was poor. She looked septic and was anemic. The heart and lungs were negative. The right side of the abdomen was markedly rigid and tender, especially at the upper part. There was tenderness and a sense of resistance in the right flank but no rigidity of the muscles. No distinct mass could be felt, probably because of the rigidity of the anterior abdominal muscles.

The urine was acid, its specific gravity was 1.020, it contained a faint trace of albumin, a few red cells and many pus cells. No casts were found. The blood count showed 12,000 leucocytes.

On account of the preponderance of the abdominal symptoms I determined to first make a small exploratory abdominal incision, which would also enable me, if necessary, to ascertain the condition of the opposite kidney.

Operation, July 15, 1902. A two-inch incision was made at the border of the right rectus and the diagnosis confirmed. A transverse lumbar incision five inches in length was then made and the kidney removed. The entire operation only consumed thirty minutes and there was practically no shock or hemorrhage. The kidney was studded throughout with miliary abscesses. The fatty capsule was infiltrated and inflamed but stripped off readily.

The temperature of the patient immediately fell to normal and, except for a rise to nearly 101°F. on the third day, remained so, and she left the hospital entirely well on August 1, 1902, just seventeen days after her admission. She is still in perfect health.

In some of these cases nephrotomy does result in an eventual cure, in others secondary nephrectomy has to be done. The great advantage that nephrectomy has over nephrotomy, namely the removal of the entire source of sepsis, more than compensates for the loss of the kidney.

With a severe pyelonephritis in one kidney and only a moderate infection in the other, nephrectomy is probably still the better operation, inasmuch as it relieves the slightly injured kidney of the toxins which would otherwise be eliminated through it.

Nephrotomy is indicated if the infectious process becomes localized in distinct portions of the kidney, and in cases of double pyelonephritis when the condition of the other kidney is doubtful.

Calculus Disease.—Nephrotomy or nephrolithotomy for stone will always be the ideal operation, especially if the incision in the kidney can be closed.

There are, however, cases of renal calculus in which the morbid changes in the kidney are so great that they can well be classed with cases of hydro- or pyonephrosis. Often a distinction

can only be made by determining the original disease; for calculi are not infrequently formed in pyonephrotic kidneys as a result of the inflammatory process, as in Case I, and, on the other hand, calculi by obstructing the ureter or the infundibula may give to general or localized dilatations of the kidney, producing a hydronephrotic condition; or, as is more likely in these cases, infection supervenes with its concomitant production of new tissue causing contractions and dilatations until finally a characteristic pyonephrosis is produced.

In order to fully understand the difficulty one has to meet in removal of some calculi from the kidney let us glance for a moment at the processes which go on in these cases. We not infrequently see large stones which form almost complete casts of the pelvis and infundibula of a kidney, I show you two such calculi to-night. In removing such stones there is usually found in the calices between the papillæ and the calculus a greater or less amount of calculous sand. Often this débris is not merely sand but forms of a flat plate which is separate from the main calculus. This plate may increase in size and form a separate calculus of considerable dimensions, as is well seen in the specimen from Case IX. As the secondary calculus increases in size it dilates the calyx or infundibulum becomes contracted and may even become shut off and thus the secondary calculus becomes incased in a secondary pyonephrotic dilatation of the kidney substance. Even if this last does not occur the secondary stone as a rule is too large to be removed with ease through the infundibulum.

Suppose now we have made an incision through the kidney substance large enough to remove the main calculus and the blood is pouring, as it usually does, from the cut surface so that the whole field is obscured, how can we be sure of finding all the stones that may be in any of the calices? As an example of this difficulty one of the calculi in the kidney removed from Case IX was not found when the kidney was opened and examined after the operation, it not being discovered until a further incision had been made some months later.

Although I have never lost a case of nephrotomy for calculus, yet I always approach one with more uneasiness than a case for nephrectomy. In some the hemorrhage is insignificant, in others I have seen the patient almost exsanguinated in the time taken between the extraction of a large irregular calculus and the searching for and extraction of the small secondary ones.

The removal of even a single stone is not always followed by complete recovery. I have at present under my care a young married woman twenty years of age, who had a single stone removed from her left kidney six years ago by one of the most careful and skilful surgeons in this city. After a rather protracted convalescence from a urinary fistula and a secondary operation the wound healed. Three years afterward it broke

open for a few weeks and again healed of itself. Eight months ago she became pregnant and for four months up to her operation three weeks since she suffered from attacks of pain and distention in the kidney. The kidney was large and there was a small quantity of pus in the urine when I first saw her some eight weeks since, but I tried to have her go through her confinement without operation, hoping that with the emptying of the uterus the damming of the kidney might be relieved. However, I finally had to incise the kidney on account of a very severe attack. This relieved her of a certain amount of septic absorption as well as her pain. On opening the kidney a large quantity of purulent urine escaped and there seemed to be a large continuous cavity; no stones could be felt.

She was prematurely delivered a few days ago and nearly died of a post-partum hemorrhage, which may have been due to the long continued septic absorption from the kidney.

It would have been better for this patient to have had her kidney removed with the calculus. But the operator would probably have never forgiven himself had he done so.*

The following case is reported in detail as it possesses considerable interest in being as it seems to me at the border line between nephrotomy and nephrectomy:

Multiple Renal Calculi; Obstruction of Ureter; Pyonephrosis. Nephrectomy. Cure.

Case IX.—B. C., housewife, twenty-nine years of age, married. Admitted to the Roosevelt Hospital August 11, 1902. Two children, the youngest nine months old, which she was still nursing. Ten years before admission during a period of several months she had severe pains in the left lumbar region. Since that time there were very few symptoms, for the most part only amounting to discomfort and occasional pain after exercising.

For several years she had given up riding. For at least two years the urine had been cloudy and contained pus. For several months she had been under treatment for cystitis and came to New York for further advice.

On admission, her general condition was excellent. Heart and lungs were normal. The abdominal walls were thick. The left kidney was palpable and tender on deep pressure. The right kidney could not be felt.

The urine was acid, and contained a large quantity of pus, otherwise it was normal.

Cystoscopy showed an apparently normal mucous membrane. The left ureter was catheterized and purulent urine obtained. A specimen was not obtained from the left kidney as she could not stand further instrumentation, not having an anesthetic.

A radiograph of the kidneys was taken by Dr. Johnson, which showed beautifully a large mass of calculi, apparently three in number in the left

kidney. None were apparent in the right kidney. Operation was performed August 12, 1902. The kidney was exposed through a six-inch transverse lumbar incision. It was large and somewhat distended. Two large calculi could be easily felt in the pelvis. In places the cortex was thinned out over what were evidently cystic dilatations of the calices. In one of these a calculus could be felt.

The condition of the kidney was such that I felt very doubtful in regard to the ultimate result of a nephrotomy and consequently removed the kidney without incising it.

There was no shock following the operation. The urine at once became free of pus and was passed in normal quantity. The wound was entirely healed in nine days. She has enjoyed the best of health since the operation and has not had a symptom of any kind.

On opening the kidney two stones were found in the pelvis, one was an irregular branching calculus weighing when dry 13.7 grams and the other a smooth elliptical one weighing when dry 3.9 grams. The latter acted as a ball valve engaging in the mouth of the ureter and had worn a smooth somewhat concave facet on the large one. In one of the distended calices a third stone was found which weighed 0.9 gram. On cutting the kidney again the other day I found a fourth in a calyx in the lower pole which weighed 0.3 gram.

The mucous membrane of the pelvis was thick and velvety, a section from the cortex showed marked parenchymatous degeneration. There was, however, much secreting tissue in the kidney as you can well see from the specimen, and I felt that I had removed a much better kidney than I had supposed it to be when handling it in the wound. Nevertheless, if I had been satisfied with a nephrotomy I am positive that I should not have obtained a cure inasmuch as it would have been almost impossible to have located the little stone in the pole of the kidney. Even if one had found no other stone it would have been difficult to find, but with three stones found it would be ten to one that it would have been overlooked.

As I have before stated I consider this case in the *Grenzgebiet* between nephrolithotomy and nephrectomy. I have removed larger single stones than the largest in this case, but from an otherwise practically healthy kidney. The presence of cystic dilatations in an affected kidney is the indication for nephrectomy.

The dangers of the so-called conservative operations, namely nephrolithotomy and pyelolithotomy in severely infected kidneys is emphasized by Israel's statistics.

In 13 cases so treated the mortality was 38.4 per cent., while 15 nephrectomies for the same condition gave a mortality of 16.3 per cent. On the other hand in aseptic and very slightly infected kidneys in which the ideal operation of suture of the kidney could be done the mortality was only 3.4 per cent. in 29 cases.

* Since the reading of this paper this kidney has been successfully removed.

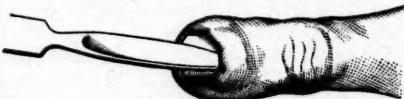
AN OPERATION FOR PARONYCHIA, OR "RUN-ROUND."

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It is a matter of constant surprise to me to see how many skilful physicians and surgeons treat cases of paronychia by making an incision through the flesh of the finger into the pus sac at the root of the nail. Others again remove the whole nail or make an incision across the nail and remove its root. These last two procedures are based upon the correct principle. The infection and pus are in the groove in which the root of the nail is lodged, and by these operations this groove is opened and may be disinfected.

The author's operation consists in separating the attachment of the cuticle to the dorsal or exposed surface of the nail to a sufficient extent to permit the escape of the pus and the introduction of a stick of nitrate of silver to disinfect the sulcus. Its advantages over partial or complete re-



moval of the nail are the simplicity and ease of its performance (no anesthetic, no instruments except the point of a knife) and its entire painlessness. There is not a drop of blood drawn, and a rapid cure may be expected, most cases being entirely well in three days.

Of course, there are some cases of long standing in which the nail has separated from its bed and had better be removed, either wholly or in part. Incision into the flesh is always radically wrong. Even though the pus may be nearly a dram in amount, it is not in a cavity in the flesh but in a groove which may be opened by an entirely painless procedure, which leaves no disfigurement.

I am indebted to Dr. William S. Terriberry for the drawing illustrating this paragraph.

183 West Seventy-sixth Street.

THE GEOGRAPHIC DISTRIBUTION OF UNCI- NARIASIS IN THE UNITED STATES.

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UNTIL very recently, this disease was looked upon as a medical curiosity in this country; but the introduction of laboratory training and the more thorough knowledge of the helminths by the medical profession at large, have brought to light many cases which would have escaped the notice of the practitioner of the decade gone by.

The literature of to-day is comparatively small with regard to the reported cases, but very shortly we may expect to see an entirely different state of affairs. With the acquisition of our insular holdings in the Far East, and the returning of troops from Cuba, Porto Rico, the Philippines, and China, where *Uncinaria* abound, there is every reason to suppose that we shall soon find that many cases will develop and become speedily recognized.

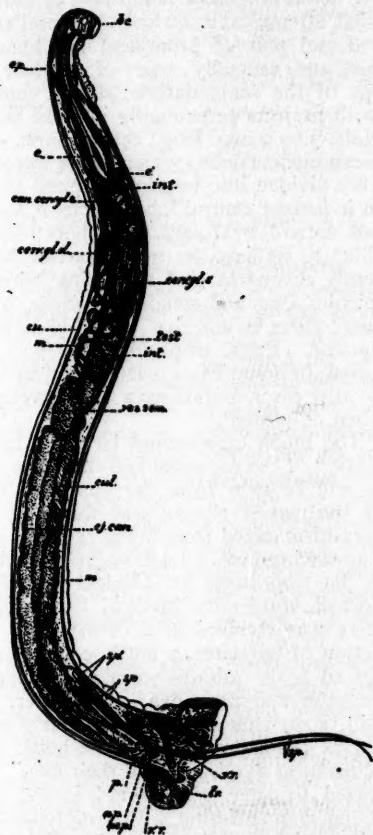
As to the prevalence of the disease in this country, comparatively little is actually known. A very interesting and convincing suggestion has been made by Ch. Wardwell Stiles of the Bureau of Animal Industry at Washington, D. C. He believes that it will be demonstrated that many of the obscure cases of anemia that occur in the Southern States, where the curious habit of clay-eating exists, are undoubtedly due to the infection of these individuals by *Uncinaria*. As early as 1821, Chabert refers to a custom of the negro slaves in Louisiana, who would eat dirt and produce an illness which would permit them to escape from work. Later in 1850, Duncan describes the existence of the same state of affairs among the negroes of the Georgia plantations. His description of their symptoms corresponds quite closely to those of *Uncinariasis*.

This curious custom of clay-eating prevails in a number of the Southern States to-day. Some of the inhabitants of Georgia, Louisiana, Florida, the Carolinas, Virginia, and West Virginia especially, and also in Maryland and Tennessee, the whites as well as the blacks, are addicted to clay-eating. Previous to the war of 1861 the so-called "poor white trash," were frequently addicted to the clay-eating habit. Stiles thinks that their well-known laziness was due to the ingestion of and the infection by the hookworm.

The outbreak of *Uncinariasis* among the workmen employed on the St. Gothard Tunnel, which has long since become classic, has raised the interesting question as to whether the building of the Subway in our city will, in the course of time, result in the report of cases of *Uncinariasis* among the laborers employed on this undertaking. Not long since, a physician of Brooklyn, reported the finding of a rhabditiform embryo in the earth taken from the subway excavations. Whether or not it was an embryo of the species under consideration was not determined, nor could it be until it was hatched out into the adult form, as many helminths take on the rhabditiform condition during embryonic life. Personally I do not believe that the soil of this part of the country contains the *Uncinaria duodenale*, but inasmuch as the large majority of the laborers employed in the work of excavating are Italians, who have but recently come to this country from a land where the disease is well known, it is easy to see how cases may eventually develop among them. If, however, the *Uncinaria Americana* makes its habitat in the soil of this State, we may have the disease develop among us.

The first case to be reported where the parasite was recovered from the intestinal tract by an American observer, was in 1864. In writing of parasites, F. Herff (Texas Med. Jour., Vol. 9, 1894) mentions the finding in the intestinal tract of a Mexican lady, who had died from anemia and dysentery, of certain worms which he thought

Fig. 1.



Male hookworm (*Uncinaria duodenalis*) of man: ac.p., accessory piece to spicules; a.p., "anal papilla;" b.c., buccal capsule; can. cerv. gl. s., canal of left cervical gland; cerv. gl. d., right cervical gland; cerv. gl. s., left cervical gland; cu., cuticle; cul., cul de sac of testicular tube; e., esophagus; e., posterior end of esophagus; e. p., ventromedian excretory pore; ej. can., ejaculatory canal; int., intestine; l. r., lateral ray of bursa; m., muscular layer; p., lateral praecaudal papilla; sp., spicules; sp', anterior end of spicules; test., testicular tube; ves. sem., vesicula seminalis; v. r., ventral rays of bursa. Greatly enlarged. (After Schultheis [copied from Blanchard, 1888, p. 755, fig. 370].)

were *Uncinaria duodenale*. From his description of the case, it was in all probability true uncinariasis. It is true that this could scarcely be considered as a case occurring in this country, for the probabilities are that the disease was contracted in Mexico where the parasite is now known to be exceedingly common. Since that

time there have been a number of cases reported where the parasite has been recovered from the intestinal tract.

Charlotte Schaeffer describes the results of an attempt at colonization in the State of Chiapas, Mexico, in which the greater portion of the colonists died as the result of an illness simulating the hookworm disease. She also remarks that the native Indians die in great numbers from the same disease.

Up to the present date there have been but 38 undoubted and indisputable cases of uncinariasis reported in this country. These, with the exception of Capps' case, are reported and collected in the report of the Bureau of Animal Industry by Ch. Wardwell Stiles. The cases show that uncinariasis has existed in Louisiana, Florida, Texas, Alabama, Georgia, South Carolina, Missouri, Mississippi, Virginia, Maryland and New York. While at the last meeting of the American Medical Association, held in Saratoga, the author was told of a case where the parasite had been recovered from the intestinal tract by Dr. A. Smith, of the University of Tennessee, in a longshoreman who had never been out of the State of Tennessee. The patient had presented symptoms typical of the disease.

The most recent case to be reported is described by J. A. Capps, of Chicago (*Jour. of Amer. Med. Assn.*, Jan. 3, 1903). It is of interest at the present time in the light of the proposition of the government to build the Trans-isthmian Canal through the Panama route. It was while in that region that the patient contracted the disease. This should prove a warning to the United States and be a forerunner of what we may expect, if proper precautions are not taken to prevent the contraction of the disease by those who are to be occupied in the excavation of the canal.

Of the 39 cases in which the author has examined into the history of the contagion, at least 18 were certainly contracted outside of the United States. In New York, there is but a single case which can be said to have been infected within the boundaries of the State; that of the boy who received his infection through contact with an Italian workman employed in his father's brick-yard. This laborer brought the worms to this country from his native land.

That the new variety of the parasite, described by Stiles is capable of producing the disease is evidenced by the reports of cases by Dr. John Guiteras of Havana. These examples occurred in Cuba, though the infection took place in Florida.

So far, Texas has given us the greatest number of cases. In a personal letter to Dr. Stiles, Dr. Allen J. Smith, of the University of Texas, states that he found the hookworm present in the stools of eight of the students of that university. These data were obtained from the examination of eighty separate specimens. It would appear from this statement that ten per cent. of all the students were infected.

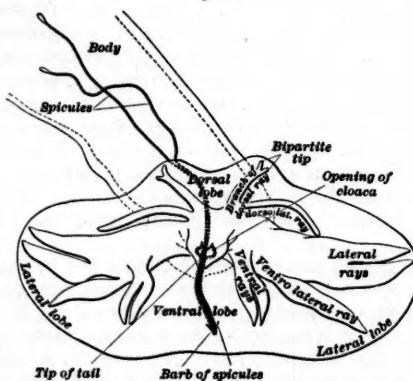
Dr. Bailey Ashford of the United States Army,

while at Glen Island, New York, in the summer of 1900, examined the stools of several Porto Ricans, of a colony of twenty, who were encamped there, to exhibit the industries of Porto Rico, and found that four of them were infected with the parasite. He thinks that he would have found three-fourths of them to be infected had time permitted his examining all of the colonists.

In 1896, F. G. Mohlau, reported five cases from Buffalo, three of which were traced to a source outside of this country. One, a man of fifty-eight years, had been employed on the St. Gothard tunnel. In the other suspected regions, there have been one or two cases reported.

A point of interest in uncinariasis and which will doubtless be broached in the near future, is the question of infection of the human species with the *Uncinaria canina*. This species is exceedingly common in the dog, and quite closely resembles the *Uncinaria duodenale*. It abounds in large numbers in and about Washington, D. C., both in Maryland, and Virginia. Some authorities hold that it may be communicated to man, and so, it would not be surprising that cases of this variety would soon be found in the human intestinal tract. The parasite is much larger than the *Uncinaria duodenale*.

Fig. 2.



The caudal end of the New World male hookworm (*Uncinaria Americana*). The bursa is spread out to show the arrangement of the rays. Note the short dorsal lobe which is subdivided, forming two lobes; note also the indistinct ventral lobe connecting the two lateral lobes. The dorsal lobe is thrown back over the body. Greatly enlarged. After Stiles.

Two varieties of the hookworm are found in man, *Uncinaria duodenale* and *Uncinaria Americana*, so that it would seem well to describe them in order that they may be more easily recognized. The best description of the parasites, is to be found in the reports of the Bureau of Animal Industry, for 1901, which is as follows:

The male *Uncinaria duodenale*: body cylindrical, somewhat attenuated anteriorly, buccal cavity with two pairs of ventral teeth curved like hooks, and one pair of dorsal teeth directed forward; caudal bursa with dorso-median lobe, and promi-

nent lateral lobes united by a ventral lobe; dorsal ray divides at point two-thirds its length from its base, each branch being tridigitate; spicules long and slender. The female: 10 to 18 mm. long; vulva at or near the posterior third of body. Ova, ellipsoid, 52 by 32 μ , laid in segmentation. Development direct, without intermediate host.

Uncinaria Americana: Body cylindrical, somewhat attenuated anteriorly. Buccal capsule with a dorsal pair of prominent semilunar plates or lips, and ventrally pair of slightly developed lips of the same nature; dorsal conical median tooth projects prominently into the buccal cavity. Male, 7 to 9 mm. long; caudal bursa with a short dorso-median lobe, which often appears as if it were divided into two lobes united ventrally by an indistinct ventral lobe; common base of dorsal and dorso-lateral rays very short; dorsal ray divided to its base, its two branches, being prominently divergent and their tips being bipartite; spicules long and slender. Female, 9 to 11 mm. long; vulva in anterior half of body but near the equator. Eggs, ellipsoid, 64 to 72 μ to 40 μ broad, in some cases partly segmented in utero, in other cases containing a fully developed embryo when oviposited.

Too much care cannot be taken in the identification of the parasites and their ova in the feces, as will be seen from the appended case. Only by the merest chance was this case of pseudo-parasitism saved from being reported as a case of true uncinariasis. Last summer, while working in the laboratory for Clinical Pathology in the Cornell University Medical School of the city, there was received as a contribution to the collection of parasites, a bottle containing what appeared to be minute worms with hook-like extremities and their ova. The latter, were ellipsoid, somewhat large (suspiciously so), and of a dark red-brown color. The bottle was labeled "*Uncinaria duodenale* and their ova." They purported to have been found in the stools of a young man suffering with symptoms of uncinariasis, which had been contracted in the Philippines. Under the microscope, the so-called worm was found to possess some similarity in shape to the hookworm, but appeared to be composed of vegetable matter. At first the origin of the matter was puzzling, but later it was identified as the hairs of the strawberry, while the putative ova were nothing more or less than the seeds of the same fruit.

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LUNG SURGERY: HISTORICAL AND EXPERIMENTAL.*

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A KNOWLEDGE of the comparative anatomy of the lung is essential, especially for experimental work. In reptiles only one surface of the capillaries is exposed to the air, while in man all sides are exposed to air. The lung of the water-dog (*Necturus lateralis*) consists of two elongated cylindrical bodies. Both the outer and inner surfaces are smooth. There is both an arterial and venous system. These are so arranged that each vein is at right angles to the corresponding artery. Snakes have only one lung (the right). It is an elongated cylindrical body, and smooth two-thirds of its length. The posterior third is divided into numerous air cells, which communicate with a central cavity without any apparent communication between the air cells.

In birds the bronchus, after penetrating into the lungs, breaks up into numerous tubular passages. These passages are not true bronchia, since the alveoli or true lung structures arise directly from them. The principal bronchia communicate by large rounded openings with large air-bags situated in the abdomen and in the hollow bones. These air-bags should be considered as part of the lungs, as they are directly connected with the bronchi. The air-sacs do not communicate with one another.

The lung of man receives its blood from two systems the bronchial and the pulmonary. In the first, the venous radicles from the bronchioles empty into the vena pulmonalis, and the arterial branches into the vena azygos. Hence in all operations involving the bronchus the latter should be ligated transversely, whether it be transverse to the lung or not. The larger pulmonary arteries and veins are situated in the intralobular connective tissue. They subdivide into minute vessels, each encircling an alveolus, and then split up into a very fine capillary network, only separated from the air by the exceedingly thin alveolar membrane. Only a single mesh of capillaries exist in an interalveolar septum.

*Abstract of a paper read before the Western Surgical and Gynecological Association, St. Joseph, Missouri, December 29 and 30, 1902.

Malpighi, 1661 A.D., was the first to discover them. He first found them and the lung cells in the mesentery and lungs of frogs.

Lymphatics rise from the alveolar septa and communicate directly with the alveolar cavity by stomata in the alveolar walls. The lymphatics form a plexus in the submucous tissue accompanying the branches of the bronchia, as well as the pulmonary veins and arteries emptying finally into the bronchial glands at the roots of the lung.

The pulmonary neve plexi are formed from branches of the vagus and sympathetic. The filaments of these plexi follow the ramifications of the bronchia, and finally become lost on them in the parenchyma of the lungs.

Monkeys have an accessory lobe called the azygos lobe. This is supplied by an accessory bronchus, which arises from the right bronchial trunk near the point where the first branch is given off. The bronchus of the sheep grows from the trachea direct.

Man's septum bronchiale is placed to the left of the longitudinal axis of the trachea. For this reason foreign bodies lodge more frequently in the right bronchus, which is shorter than the left. This is also why the right lung respires before the left at birth. There are, sometimes, three branches of the bronchus.

The sensibility of the bronchia is thought to be slight. Some animals have one or more lobes, having as many as five on one side. Some have fissures while others have not. The normal number of lobes in man on the left is two, while three are upon the right. The fissures are many times so high posteriorly that the middle lobes will prevent palpation and auscultation of the posterior surface of the upper lobes.

Experimental Historical Observations.—Davidson's 1795, on the anatomy and pathology of the pulmonary system is one of the first contributions to this subject. Harlan, 1819, showed by experiments upon living animals that the circulation of the blood through the lungs is immediately and entirely suppressed during expiration. Cauman, 1848, said that the capillaries of the lungs do not anastomose. Bert, 1869, contributed his research on the elasticity and contractility of the lungs, and the connection of these properties of the lungs with the pneumogastric nerves. Brown, 1884, showed the alveoli of the lungs to contain squamous epithelium, and in 1885 that the bronchia contract under certain conditions. Crevilheir by dissection of a fetus showed that one or both apices may extend along the cervical spine. Here it may be remarked that the fact that the pericardium has never been found absent should be remembered in eliminating its absence in herniated lung of the left side. It should also not be forgotten, that the lower costal cartilages on the left side in women are rare, and that the cervical ribs are also rare. There being but two cases of the latter reported.

Ligatures (Historical).—Susrutus, 1,500 B.C., applied ligature to the umbilical cord of new-

born babies before severing it. Hippocrates was familiar with ligatures. Archigenes, 100 B.C., was probably the first to use ligatures in amputations. Celsus, 30 B.C., used linen thread. Galen, 131-211 A.D., was partial to silk or fine catgut for ligating the proximal ends of injured vessels. Alfonso Ferri, fifteenth century, preferred a needle three inches long, curved only at the point with the eye at the opposite end. Fabricius, the elder, 1537-1619, mentions the use of animal sutures for intestinal wounds. Fabricius, von Hilden, 1560-1634 A.D., was first to introduce hemp for ligatures into Germany. Fabricius of Aquapendente, 1647, recommended metallic sutures. Animal sutures were introduced into America by Dr. Physick in 1814. Wardorp used silkworm gut for ligatures as early as 1796, and McSweeney in 1818. Dr. Ishigaro, a Japanese surgeon, used a ligature made from the tendon of a whale. Marcy, 1871, and Croft, 1880, employed kangaroo tendons. Silk, catgut and animal tendons are preferable for sutures and ligatures in the lung.

Pneumonotomy, Pneumonectomy, Pneumoperxy.—In this head are included all cutting operations, such as amputations, incisions, removal of foreign bodies, opening of abscesses, gangrene, cysts, etc.

Fabricius, 1646, records cases in which large portions of the lungs were excised with recovery of the patients. Baglion, 1714, advocated operations on the lungs, and Barry, twelve years later, advised operations on the lungs for consumption. A fellow-officer with General Wolfe, wounded at Quebec, 1759, is said to have recovered, after the removal of a large portion of the injured lung. Hale, 1851, referred to a case of penetrating wound of the chest in which he removed a piece of the protruding lung. Little was said concerning operations on the lung for more than a century later, when Richard, 1880, reported a case, penetrating wound of the thorax with immediate pneumocele. Excision of the lung was employed, and the patient recovered. Thomas, 1885, suggested and treated cysts of the lung by opening and drainage. Bull, 1891, treated two cases of gangrene by operation. Tuffier, in his Moscow address, analyzes 306 pneumonotomies, as follows: metapneumonic gangrene, different causes, 55 operations, 10 recoveries. Forty-nine operations for abscess, 23 per cent. succumbed. Three operations for incipient tuberculous foci were cured. Twenty-six operations for cavities, 13 recoveries. Twenty-nine operations for aseptic lesions, 22 recoveries, or 75.8 per cent. Sixty-one operations for hydatids, 55 recoveries. Two hundred and fifteen operations for septic lesions, 140 recoveries, or 64.8 per cent. Tubercular cavities, 36 operations, 36 deaths; abscess, 49 operations, 12 deaths; bronchiectasis, 45 operations, 13 deaths; foreign bodies, 11 operations, 4 deaths; gangrene, 74 operations with 30 deaths; actinomycosis, 1 operation, recovery. Total, 306; cured, 217; died 88.

B. Bell advises and opens abscess in any locality of the lung with more or less success.

Abnormalities.—There are many types of abnormalities of the lungs, any one of which might greatly influence surgical intervention. There may be one, two, three, four, five, or even more lobes or there may be the entire absence of lung tissue on either side. The blood vessels, nerves and bronchi vary greatly in number and position, so that there is no way of determining their presence or absence without opening the chest before or after death. General body deformity is also many times a cause for variations from the normal type. The diaphragm is often entirely absent in man. Hoffman, 1783, reported a case of diaphragmatic junction with the lung, and Broca, 1852, reported one with complete separation of the two lobes of the lung. There have been about fifty interesting papers constructed on the subject of hereditary defects of the lung.

Atelectasis—Apneumatoses.—Atelectasis is collapse of the lung before birth, and due to many causes, such as continued compression of the lung by fluid, new growth, or deformity.

Apneumatoses is collapse of the lung after birth, due to the same causes. Joerg, 1832; Barlow, 1841, and Spangenberg, 1844, each record such cases. More than thirty observers have reported upon this subject in the various journals.

Hernia or Pneumocele is of many varieties and degrees. Lung tissue may protrude from an opening in any portion of the chest. It may be congenital or acquired: congenital, when there is defective development of the chest wall; acquired, when due to injury. Sudden hernia have no plural sac, while those which come gradually do have a sac. If let alone, the first always have adhesions, while the latter may or may not have adhesions if let alone. Rolandus, 1499, removed a portion of a herniated lung with recovery, and he took the patient to Bologna for inspection by his colleagues. Tulpius, 1674, ligated and cut off three ounces of the lung which protruded. Knox reports two cases of hernia of the lung in the neck. Couvey reports fourteen such operations with two deaths. Morell-Lavallie, 1824, reported eight with one death. Of twenty thousand wounds of the chest, during the Rebellion, there were only seven herniae of the lung.

Abscess is the most frequent surgical lesion of the lung, and recovery more certain in the acute form, when operated upon. Balgius, 1710, was one of the first to treat tubercular abscess of the lung. Bligny, 1720; Berry and Boerhave, 1726, each advocated opening tubercular abscesses of the lung.

Comparadon, 1769, treated a case of abscess of the lung and cured it by surgical intervention. Gumprecht, 1793, treated an abscess of the lung surgically. Richeraud, 1812, successfully incised an abscess of the lung with recovery. There are many other cases of abscess of the lung, tuberculous and otherwise, which have been operated upon, many of which have recovered. Abscess

of the posterior surface of the lung is the most inaccessible form. Resection of one or more ribs is necessary, and should be done that location of the abscess may be determined by palpation. There are several hundred operations for abscess of the lung reported, with about 66 per cent. recoveries. Block, 1881, opened an abscess of the lung, patient died. Coroner censured him for operating, and Block suicided by pistol.

Gangrene is rather frequent and due to many causes, such as injury, syphilis, abscess from any cause, foreign bodies, and the acute inflammatory diseases of the respiratory system. Pneumonia is the most frequent cause, and pressure from aneurismal or other intrathoracic tumors, which interfere with the blood circulation. The most frequent site is the posterior aspect of the upper portion of the lower lobe. The mortality of gangrene of the lung, if let alone, is from 85 to 90 per cent., while it is only about 40 per cent. if subjected to surgical operation. The treatment is very much the same as for abscess of the lung. All gangrenous portions should be removed and free drainage established. There are about seventy contributions to this subject.

Syphilis.—Unless a syphilitic lesion of the lung becomes an abscess or gangrenous, nothing is to be done except to place the patient upon anti-syphilitic remedies. There are perhaps no pathologic lesions of the lung more easily influenced or completely overcome by medicaments than those due to syphilis. It is probable that but a small per cent. of the syphilitic lesions become gangrenous or terminate in abscess. The early literature begins with Zadig, 1797, who presented a paper on diseases of the lung due to venereal causes, but little was said concerning syphilitic lesions of the lung until 1841, when Munk published his paper on syphilitic diseases of the lungs. Lagneau, 1853, published his work on diseases of the lungs caused and influenced by syphilis.

Edema is an effusion of serum into the submucous connective tissue. Flint says that the transudation is primarily within the air cells. The serum also infiltrating the interlobular structure. It is found in acute infectious diseases. Valvular disease of the heart is a prominent factor in its causation. Compression of the lung by a tumor of any character. Inhalation of hot or cold air or gases. Suppurative hepatitis, Hodgkin's disease, eclampsia, leucemia, anemia and chlorosis may cause it. It may be local or general and is found in persons under fifteen years of age. Muller, 1891, is one of the first to describe this most interesting condition. Anthony, 1891, speaks of a case of pulmonary edema complicating pregnancy. There have been about twenty contributors to this subject.

Treatment of Edema.—Phlebotomy has been advocated in acute edema. The surgical treatment is essentially the same for bronchopneumonia, hydrothorax and edema.

Foreign Bodies in the lung or bronchia may be removed by coughing or they may escape through the chest wall into the trachea, esophagus, into

the pleural cavity and through the diaphragm, or from the subcutaneous portions of almost any point upon the body. Bird-shot may become encysted in the lung, and remain indefinitely. Experiments with the X-ray show that the position of a foreign body in the lung when expanded is changed when the chest is open and the lung contracts. Among the earliest reports of foreign bodies found in the lung is by Tillingius, 1688; Kirby, 1700; Buchfield, 1671. These were in the form of concretions. Graham-Craig, 1834, reported a case of deposits of charcoal in the lungs of miners (anthracosis). In later years we find the report of a brass nail in the lung. Bullets of different character, one of which was impacted for forty-two years. In 1876, Johnson, of Baltimore, in the presence of Sir Morell Mackenzie, removed a toy locomotive from the subglottic cavity by tracheotomy and thyroidectomy. Weist's records of one thousand cases of foreign bodies in the lungs are exceedingly interesting. Of 177 cases, 66 were expelled with recovery; 26 died without operation, and 85 underwent tracheotomy; of the latter 66 recovered and 19 died. In 100 cases, due to watermelon seed, 70 got well without operation; three died with it; three had tracheotomy performed, of which 26 recovered and eight died. Coffee beans caused 59 cases, most of them recovered without operation. Of 371 miscellaneous cases, 263 had no operation, 109 recovered; 108 had tracheotomy, of which 77 recovered.

Of the one thousand, 93 had tracheotomy performed but foreign bodies could not be found in 73 of them. In five of these the body was expelled through the mouth after the wound had closed. In 63 of the thousand cases, hooks, etc., were used to successively remove the body. Total number of operations 338 of which 245 recovered and 93 died. The voices of 10 were lost, and impaired in 38. Laryngotomy, 36 operations; 30 recoveries; 6 deaths. Laryngotracheotomy, 26 operations; 19 recoveries; 7 deaths. Tracheotomy, 276 operations; 196 recoveries and 80 deaths. Moxley of Ironton, O. (personal communication), had a case in which the tip of a silver spray was coughed up after having been in the bronchus forty days. DeForest Willard was one of the first to open the bronchus for the removal of a foreign body, 1891. Ferguson, 1902 records a case of a Durham tube in the right bronchus, which he removed through incision in the right neck extending through the isthmus of the thyroid to a point near the bifurcation of the bronchus. The patient recovered. There have been more than seventy papers devoted to foreign bodies in the lung.

Rupture of the lung may be due to coughing or injury, most frequently the latter, and it may occur without injury to the chest wall. Ashhurst collected 39 such cases without fracture of the chest wall. Twelve recovered. Otis collected 25 such cases from military practice exclusive. Eleven of these recovered. Tait, of Edinburgh, 1844, records a case of rupture of the lung since

which time there have been many similar cases reported, with about 30 per cent. of recoveries without operation. Ferrari, 1855, reports a case of rupture of the lung due to deep inspiration. Wallingford and Roberts, 1901, record a case of spontaneous rupture of the bronchial artery with instant death. Twenty-four papers by as many different writers constitute the literature upon this subject.

Gunshot Wounds.—The history of this class of wounds begins with Mallet, who in 1743 published a report of a lad, who was shot through the lung. Rigby, 1790, reported a case of recovery after the ball had passed through the lung. Hermetically closing the chest was suggested by Parré, Larry and Lamotte, and again by Benjamin Howard in 1863, just before the battle of Gettysburg. Sixty-seven cases were so treated for injured lung; 25 recovered; 42 died. Fifteen out of the 42 were found upon autopsy not to have received lung injuries. In the absence of statistics it is safe to say that the same per cent. of those who recovered (25) did not have lung injuries. It is probable that the same rule could be applied to all chest wounds, that is, only about 30 per cent. of undetermined chest wounds do not involve the lung. Dr. Orpheus Everett's name appears among those who sealed chest wounds at Gettysburg. He having closed five with death resulting in each case (personal communication). Only three recoveries took place out of 200 chest wounds at the battle of Sebastopol, treated by the administration of digitalis; while 27 recoveries ensued in 127 wounds of the same character treated by venesection. About 62½ per cent. of the wounds received during the Civil War, U. S., 1861-1865, were of the chest. The upper lobe was most frequently wounded, the ratio being 1 to 2. Of 8,715 chest wounds in the Rebellion, U. S., 1861-1865, 492, or 5½ per cent. spat blood, and 60 per cent. of the total number died.

Lacerated and Incised.—As early as 1777 Pew gave an account of a most wonderful recovery after a wound through the lung. Sewell, 1849, reports a case of transfusion of the chest of a youth, eighteen years old, who accidentally fell on a scythe blade, the point passing under the right axilla between the third and fourth ribs straight through the chest. There was no hemoptysis, and the patient soon recovered. Brown, 1877, reports a case of a young man, who, while running to a fire, struck the pole of a carriage, which passed through the chest under the left nipple. There was no hemorrhage; the boy recovered. Casper, 1880, reports two cases of wounds of the lung; in one by a carriage pole, and the other, the end of a mast, passed through the lung. Brokaw, 1890, reports the case of a shipping clerk, who received a thoracic wound extending from the third rib to within an inch of the navel, 13½ inches long, completely severing all muscular and cartilaginous structures. In addition there was a terrible abdominal wound causing almost complete intestinal evisceration.

The lung partially collapsed, the cartilages were ligated with heavy silk and hemorrhage checked by ligature, and packing gauze in the interchondral spaces. The patient was discharged in a little over a month. The only evil result remaining being a small ventral hernia.

Polypi of Bronchia.—Only a few cases of this type have been reported, however they exist more often than is generally supposed. They may become detached and expelled by coughing. They may partially or completely occlude the bronchial lumen. They may undergo fibrous degeneration, become infected, gangrenous or cause pulmonary abscess, or they may remain indefinitely without causing any trouble. Clark, 1700, reports one of the earliest recorded cases. Sander, 1719, reported a case of a polypus coughed up from the wind pipe. Hankel, 1837, reported cases of chronic trachitis and bronchitis due to polypi of the bronchia. Their presence when penduculated is noticeable in the change of bronchial sounds caused by the polypi swinging back and forth. But when the bronchia is occluded the sounds will cease.

Lymphoma is a malignant growth rarely found in the lungs. It is generally secondary. The harder growths are yellowish, white and dry, rarely spreading beyond the capsule, and never undergo cheesy degeneration. Suppuration is indeed rare; found oftener in men than in women. Probably due to occupation. The lungs of cobalt miners of Schneeberg are said to be invariably affected with lymphosarcoma.

Chondromata as a rule are due to trauma and usually appear in the cartilages of the bronchia (enchondroma), but they may originate in the absence of cartilage, which is the rarest form (ectochondroma). They may be combined with sarcoma. A primary enchondroma is reported by Courment, 1895.

Osteomata.—Three varieties form in the lung: (1) osteoma eburneum; (2) osteoma spongiosum; (3) osteoma medullosum. All are supposed to be due to syphilis, and are found in the form of thin plates which are of slow growth. Brambella, 1895, records a case of multiple osteoma of the lung due to gout or syphilis.

Dermoid is rarely found in the lung. Goodlee, 1889, opened a dermoid of a lung, removed the process and drained with recovery. Sormain, 1891, and Ogle, 1896, each report a case of dermoid cyst of the lung.

Surgical Treatment of Benign and Malignant Tumors.—Dissection of the capsule of the tumor is not necessary. Benign tumors require no interference, except when troublesome on account of size. The treatment of malignant tumors of the lung, thus far, is very unsatisfactory as the malignant tissue cannot be entirely removed. There are many cases of sarcoma and carcinoma of the lung reported. One of the earliest publications of cancer of the lung being Bricheteau's case, 1832. Huber, 1890, is probably the first to report sarcoma of the lung. Since then there have been 26 contributions to the subject. Car-

cinoma is less frequent than sarcoma, there being but 19 contributions to the subject.

Bacilli.—*Anthrax* of the lung was discovered by Davaine and Rayer in 1850. The domesticated animals of Algiers are said to be immune to this disease. Schottmueller, 1898, reported two cases of anthrax in the human lung. One of the patients made baskets from strips of hide. In the other the cause could not be ascertained. *Bacillus adematis maligna* has been found in the lungs of animals. *Bacillus aerogenes capsulatus* found most frequently in cases following trauma. *Bulletin Johns Hopkins Hosp.*, Vol. 3, pp. 81-91, 1892, offers the first contribution on this subject. Ohlmacher and Loeb, 1900, have written extensively upon this subject, in the *Boston Med. and Surg. Journal*, Vol. CXLIII, p. 73, 1900. *Bacillus typhosis* (*Eberth*) has been found in abscess of the lung by Ramsey, 1890. He also found it in gangrene of the lung and spleen. It is probably of secondary and not primary origin, and, when found, is associated with tissue necrosis arising after the third week from the onset of the fever. *Bacillus pneumonia* was first described by Friedländer, and is found in alveoli exudates and in the exudates of the pleura, and pericardium in cases of croupous pneumonia. It is a short thick bacillus resembling cocci enveloped in a gelatinous capsule. Sometimes a single capsule contains two or more bacilli. *Bacillus tuberculosis*, first described by Koch in 1883.

Parasitic Fungus (Actinomycosis) is a vegetable parasite found in animals and men, and is supposed to be inhaled after having colonized in the mouth, probably in decayed teeth. Direct infection of the lung is very much questioned. Sebert, 1848, was the first to publish anything upon the subject. Belfield, 1879, was the first to discover this disease in America. Ponfick, 1882, was the first to recognize this disease in man. Murphy, 1884, was the first to discover this disease in man in the United States. It is said that the first case diagnosed in living man was reported on February 12, 1889, by Powell and Goodlee. Hueser, 1895, reported a case of primary actinomycosis of the lung. Benter reported one which recovered. When found in the lung the patients do badly. Twenty per cent. of the cases reported have been of the lungs.

Aspergillus.—Virchow first mentioned this vegetable parasite in 1856. The most dangerous of the species is the *Aspergillus fumigatus*. Wheaton mentions a case in a 2½-year-old child. There is no general infection and the examination of the sputum reveals nothing, and is said to be always secondary. Furbrugier, 1886, collected eleven cases.

Pneumonomycosis has been known for half a century to be causative factor in lung diseases. Bristowe, 1853, reported a vegetable fungus growing in the cavity of the lung. But its identity is uncertain. Some think pneumonosis to be an aspergillus.

Echinococcus is the tapeworm in the dog, and

its larvæ enter the human body with food or water. The embryo passes through the wall of the stomach and develops in a tissue in which it becomes lodged. Todd, 1852, reported a case of hydatids of the right lung with recovery after expulsion of the cyst. Since then there have been fifty contributions to this disease of the lung. Man is not infected by eating meat containing the hydatid, because it is only the embryo of the echinococcus that is the cause of disease in man. If taken into the body in the mature state the hydatid will become encysted without injury to its host. Here it forms its eggs and thus is prepared to infect any animal into which it gains entrance. If the hydatid does not become encysted in the body it is either digested or passed out through the alimentary tract.

Paragonimus Westermani is a trematode indigenous to Asia and Formosa, and especially in Formosa. It is commonly known as a lung fluke, found in both animal and man. Manson was the first to describe this parasite. It is not found in the very young or the very old, usually found in those of strong constitutions of middle life and various stations of life. Yamagiwa thinks that surgery might be tried if the exact locations of the more superficial cysts could be determined. It is becoming quite common in the United States. There have been twenty-five contributions to this subject. It is characterized by hemoptysis.

Cysticercus is caused by the presence of entozoons. It is the larvæ of various species of *taenia* (tapeworms). It is taken into the body with uncooked meat; sometimes by working or handling dirt, etc., in which feces of these animals or fowls may have been deposited. It is comparatively rare in the lung. Roelker, 1863, was one of the first Americans to contribute to this subject.

Trichina Spiralis is a trematode rarely found in the lung, and then only in the muscular tissue, by the microscope. The cyst is ovoid in shape, at first transparent, becoming opaque and ultimately calcifying. It is coiled and the female is larger and more numerous than the male.

Emergency surgery precedes elective surgery, and surgery of the lung is not the exception to the rule. One can hardly imagine a pathologic condition in the lung that has not been dealt with surgically, with more or less success in emergency cases. This being true, the same methods may be applied in selected cases, with even better results if the more modern surgical principles be employed: (1) Severing one or more of the larger pulmonary blood vessels results in instant death; (2) if death does not result within a few minutes, bleeding will be slow and gradual; (3) if bleeding be slow and gradual it may require hours or days to cause fatal exhaustion; (4) if death does not occur, until after the end of the second day following severe bleeding, infection is its cause; (5) all or a part of the escaped blood may pass through the opening in the chest into the bronchus or alimentary tract; (6) the blood

may escape into the pleural cavity or cavities, pericardial or peritoneal cavity, or all, and thereby become concealed.

Experimental Surgery of the Lung. (Personal conclusions.) *Pneumonotomy*—(7) More definite knowledge of conditions and symptomatology is necessary that surgery of the lung may be perfected and made more aggressive and general; (8) abnormalities, congenital or acquired, must always be considered in dealing surgically with the lungs. (9) *Atelectasis* and *apneumatoisis* should be cared for by relieving the compression in removing the cause; (10) the same surgical principles can be applied to the lung as other organs of the living body; (11) the bony chest may be opened for explorations of the lung with as little danger as opening the abdomen, cranium, articulating capsules, kidney, liver, pancreas, spleen, stomach, gut or hepatic ducts; (12) hermetically closing the chest is irrational, unscientific and dangerous; (13) closing the chest wound by any means does not prevent the escape of blood from injured pulmonary vessels into the pleural cavity; (14) all wounds of the chest wall, whether penetrating or non-penetrating, should be treated aseptically, and with reference to drainage; (15) no instrument or needle should be made to enter the lung tissue for exploration, or the removal of fluid, unless the bony chest has previously been opened. (16) *Foreign bodies* in the bronchia or parenchyma of the lung may be detected with a fine exploratory needle through an open chest with the lung contracted. (17) foreign bodies in the lung and bronchia, when causing serious symptoms, should be removed; (18) some small foreign bodies become encysted and remain harmless; (19) The position of a foreign body in the lung changes with expansion and contraction of the lung. (20) *Hemorrhage* when due to pulmonary tuberculosis should not be allowed to become fatal without opening the bony chest, and the application of pressure by forceps, gauze or otherwise. (21) *Bleeding* of the lung from any cause will in many cases cease when the lung is allowed to contract upon itself with an open chest. (22) *Blood clots* within the pleural cavity should be removed at time they are discovered, whether infected or not infected. (23) *Blood clots* in the pleural cavity may become organized with or without adhesions of the parietal and visceral pleura, or they may become infected and cause most serious consequences. (24) *Hemoptosis* may be absent in the more severe lacerations of the lung; (25) if bleeding from larger pulmonary vessels results, forceps should be applied. If not, gauze should be securely packed in the cavity; (26) drainage of pulmonary cysts of any character can be done with the same success as in any other organ; (27) incision for drainage should be done with or without the presence of adhesions; if without adhesions, the opening in the chest should be at lowest point of pleural cavity for gravity drainage; (28) many incisions of the lung may

and should be made with or without even local anesthesia; (29) it is probable but a few will necessitate the use of general anesthesia. (30) *Abscess* of any character and of any location in the lung should be found and opened. (31) *Gangrene* of the lung demands most radical surgical measures, such as opening the chest drainage, and the removal of all necrotic tissue. (32) *Polypi of bronchi* seldom necessitate removal, but they may cause conditions which may require surgical intervention.

Pneumonorrhaphy.—(1) Silk, silkworm-gut and animal tendons are the most desirable materials for lung surgery; (2) absorbable sutures and ligatures are as a rule not to be relied upon as to strength and durability; (3) silk and silkworm-gut may become encysted in the lung, and remain harmless; (4) the tug, and a combination of the tug and tobacco pouch sutures constitute the most desirable ones to use in the lung; (5) ligatures and sutures may be dislodged by sudden expansion of the lung due to sudden closing of the opening in the chest wall; (6) the blood vessels, bronchia and lung tissue should be ligated separately, great care being taken not to include too much tissue of any kind in one ligature; (7) needles to be employed in lung tissue should be round, with a rounded point. They should never have a sharp point or sharp edges; (8) not all ruptures, punctures or lacerations of the lung require suture, or any surgical intervention whatever. (9) *Many lacerations* of the lung without fracture of the bony chest can and should be treated by suture, compression with gauze or forceps. (10) *Puncture* of the lung from any cause (such as stab and gunshot) resulting in hemorrhage, should be treated by opening the chest, and the application of ligature or compression. (11) *Rupture* of the lung should be treated as laceration.

Pneumonectomy.—(1) A portion or all of one lobe, or the entire right or left lung may be removed without causing death. (2) For complete or partial lacerated portions of the lung, when severe, pneumonectomy is necessary and should be done. (3) *Gangrene* of the lung requires in many cases removal of all narcotic tissue. (4) *Hernia* of the lung when sudden and of but few hours duration should as a rule be amputated, and the stump fixed in the *chest wall* as there is no sac. (5) *Hernia* of the lung, coming on gradually, has a sac, and should be returned to the pleural cavity, if possible, without amputation.

Pneumonopexy (1) is the safest and most rapid way of dealing with the stump of lung tissue in the majority of cases necessitating excision for any cause; (2) adhesions of the parietal and visceral pleura have without exception taken place whether they have been lacerated or incised wounds, with or without suture; (3) the degree of adhesion, corresponding with the degree of injury; (4) cysts of the lung of any character can best be drained through viscera-

parietal adhesions. In the absence of adhesions the wall of the cyst may be sutured to the edges of the opening in the chest wall, drainage to be at once accomplished or at some subsequent time.

**REPORT OF A CASE OF ONE-SIDED DISLOCATION
OF THE MANDIBLE. REDUCED BY A
NOVEL MANIPULATION.***

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THE subject of this communication may, at first sight, appear to be outside the limits of our work and I am conscious of some appearance, at least, of impropriety, in presuming to take up the time required even for a very brief communication, as this is intended to be. It would naturally belong to a Section on General Surgery, but as such a body has not yet been organized in the College, we, certainly, shall not be criticized for encroaching upon the domain of a sister section. Moreover, if we consider the subject a little more closely, in the light of embryology, we are confronted with the fact that the mandible, with the bones of the palate, nose, and middle ear, form a group intimately associated in origin and development, and therefore they should naturally be studied together. Finally, I think that its appropriateness will at once be conceded when I adduce, as a concluding argument, the fact that a case has been reported by Guignier in which dislocation of the lower jaw occurred during a laryngoscopic examination—and that occurred long before Kirstein's method had been suggested. As what has happened may happen again, it may not be amiss for the Fellows to consider the subject of dislocation of the mandible and the best methods for its reduction *secundum artem*.

I submit the following very brief report of a recent case:

Annie B., twenty years of age, born in Ireland, of good physical development, a chambermaid in a hotel, one afternoon about a month ago entered my office, holding her handerchief to her face, and complaining that her jaw was out of place. The accident had occurred a few minutes before while attempting to bite an apple. She had never had a similar injury before. She said that she had experienced no pain, and only complained of the inconvenience due to inability to completely close her mouth. She had the characteristic deformity of the right side of the face. She had almost the normal range of motion in opening and closing the mouth; but the molar teeth of the lower jaw upon the right side could not be brought nearer than half an inch to the upper teeth, and there was the usual lateral deviation so that the lower row of teeth, on the right side, were on a vertical plane internal to the upper teeth.

As I had always succeeded in reducing dislocation of the condyles by following the classic

method of pressing firmly upon the lower molar teeth with the thumbs, guarded by a towel, while an effort was made to elevate the chin with the remaining fingers of both hands, I essayed it in this case, expecting an easy victory. After several attempts, I failed utterly. I then tried to depress the molars with my thumb, while grasping the angle of the jaw, and attempting to rotate the condyle into place, but this also was unsuccessful. Nelaton's method by making pressure directly upon the coronoid process was equally ineffective. Two plans then remained: the ancient expedient of placing a wooden plug between the last molars and applying a bandage to the head so as to elevate the chin, and leaving the case in this condition for a time, hoping for reduction by muscular action. The other plan was to give an anesthetic, as advised by Gross, and even if found necessary, resorting to division of the same fibers of the temporal, masseter, and internal pterygoid muscles, in order to overcome the obstacle to reduction. I was just about making arrangements to send her into a hospital, but she pleaded so earnestly, that I was persuaded to make another attempt to reduce it, without administering ether. This time I tried a modification of Nelaton's method, which I can best illustrate upon the skull, in which I have produced a forward dislocation of the right side of the mandible. (Demonstration on skull). I seized the ramus and angle of the bone with my left hand, placing my thumb in front of the coronoid process. While pressing the bone downward and backward, I asked the patient to gently open and close her mouth several times. Then, at a time when the mouth was nearly closed, acting under impulse, I struck the left side of her chin a sudden, gentle blow, with the knuckles of my right half-closed hand. Instantly the return of the condyle to its place was announced by an audible "click" and accompanied by the most voluble expressions of thanks from the delighted patient. I confess that I was surprised at the result myself, and pleased with the simplicity of the manipulation.

The modus operandi, I think, may be explained in this way. By the gentle motions of opening and closing the mouth, the condyle was worked gradually backward toward the articular eminence. Then the sudden application of force took the muscles by surprise, and while they were so to speak, off their guard for an instant, the condyle with its articular cartilage slipped over the obstruction into the glenoid fossa, before the muscles had time to contract in response to the tap or jolt communicated to them through the bone.

Where the dislocation is confined to one side—a condition that is very rare in comparison with bilateral dislocation—this expedient seems well adapted to reduce the dislocation. In double dislocation, I have never failed with the classical method, which I learned at the Pennsylvania Hospital many years ago. It is possible that the above modification of Nelaton's method may be suited to some cases of double dislocation, par-

* Read before the Section on Laryngology and Otology, of the College of Physicians of Philadelphia, Dec. 17, 1902.

ticularly where there is comparatively little tearing of the capsule. In such a case the surgeon can have an assistant stand behind the patient and place his thumbs behind the angles of the jaw, so as to steady the bone and act as a fulcrum, while the tips of his fingers press upon the coronoid processes, making pressure downward and backward, while the patient moves the jaw. Then the surgeon confronting the patient can seize the opportune moment of striking a sudden blow upon the chin, so as to reduce one side at a time, or both condyles simultaneously, if possible.

Note.—In the course of the discussion upon this communication, Dr. Geo. B. Wood, said that dislocation of the lower jaw had occurred in his experience, during operation for adenoids in a child. When he took out the mouth-gag, he noticed that the condyles were dislocated forward and the mouth could not be closed. As the child was still under the influence of ether he had no difficulty in effecting reduction by placing his thumbs on the molar teeth, in the usual method.

EYE AFFECTIONS COMPLICATING AND RESULTING FROM RHEUMATISM.*

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IN order to simplify, as far as possible, the classification of eye affections following and depending upon rheumatism, it is well to have in mind its pathology to a certain extent.

It is quite unnecessary to recall the numerous theories advanced as to its cause, or to attempt to emphasize one more than another. The results are about the same, after all.

In its pathology we have certain factors always existing. The white fibrous connective tissue is generally the first to be affected, especially that which aids in controlling and regulating movement. Likewise also the serous tissues, those habitually engaged in facilitating free and active motion. There is a decidedly greater metabolism of the tissues than of the increased waste products. The excess of fibrin is really only an excess of tissue waste, and rheumatism produces just this kind of loss. Likewise the excess of the lactic acid is the result of increased metamorphosis of the non-nitrogenous, the excess of urea the result of increased metamorphosis of the nitrogenous elements of muscle.

Again, it is well to refer to the peculiar action of the rheumatic poison on the system. It strikes now here, now there; it recurs never, or any number of times. Unless pus plus fibrin occur, not much new tissue is formed. If fibrin alone, then scarcely no permanent change.

I realize that in the consideration of the close connection between rheumatism and certain so-called rheumatic eye affections, I am confronted with the far-differing statements of men like Jon-

athan Hutchinson, Fuller, Garrod, etc. Hutchinson, for instance, said, "I think it decidedly exceptional for rheumatism, simple and uncomplicated, to show any tendency to attack tissues of the eye."

Again, Fuller said, "In all the eye cases he had in which rheumatism was a complication, he believed that gonorrhœal rheumatism, or gout, was the cause, and not rheumatism itself. Yet, above all, our most recent authorities now recognize the frequency and severity with which most any and all of the eye diseases seem at times so closely dependent on rheumatism as an etiological factor.

Beginning, then, with the external diseases of the eye. How many cases of the various forms of conjunctivitis do we see, in which local treatment seems to help but little? By questioning the patient, and learning of a present or past rheumatic history, we can often clear up the trouble by the administration of the salicylates. Often-times the conjunctivitis or blepharitis may be but the first sign of the oncoming attack. There is a peculiar irritation, called "Hot Eye," which comes on after eating indigestible food and overdrinking. Here there is a period of free lacrimation and conjunctival injection and a subsequent dimness of vision and inability to work. This condition seems, too, to carry out the rheumatic over-metabolism theory, and indicates that the eye is entirely in sympathy with the balance of the working body in the excess of the overproduction over the increased excretion of poisonous lithemic material.

Quite a paper might be written on the various tumors of the lids, as chalazia, or hordeola, etc., resulting from a rheumatic dyscrasia. Removing them is not enough. To prevent their recurring, the internal treatment of antirheumatics is in order. In severe attacks of acute articular rheumatism, it is far from rare to see an acute catarrhal conjunctivitis quickly appear with no local cause at all discernible, which will as rapidly disappear with the cessation of the joint attack. Closed tear ducts, in fact, any of the various forms of lacrymal disease may have as their exciting factor a rheumatoid diathesis. In studying lid conditions in those more or less prone to rheumatic affections, scarcely any relatively healthy lids are usually found. In these cases, there is often the so-called lithiasis conjunctiva. Here there is a calcareous degeneration of the secretion at the mouths of the Meibomian ducts. The many small yet white concretions are gritty to the touch and very troublesome, for they act as foreign bodies and cause pain and irritation. Therefore, as a result of the blood and fibro-serous changes resulting from rheumatic poison, we may have any or all of the diseases the eyelids are liable to, and these same will depend in their character on the severity and duration of the original rheumatic attack and will be equally liable to recurrence.

It is the eye itself that is especially liable to the constitutional rheumatic diathesis. The cornea and sclera are often affected. Keratitis, whether

*Read before the Harlem Medical Association, December 3, 1902.

phlyctenular or interstitial, is frequently rheumatic. So many of the chronic keratitis cases, not of specific origin, remain obstinate to the most careful local treatment, yet how quickly have we not seen them improve when the anti-rheumatic drugs were sufficiently pushed?

We are all of us so apt, I fear, to make local treatment our sole care, especially in the crowded clinics, not giving the constitution and its frailties its fair share of attention. The scleral diseases, scleritis and episcleritis, are important, not only as regards their local manifestations and symptoms, but also, and more important still, are the frequency with which the adjacent tissues, as the iris and choroid, become secondarily affected. In the sclera the preponderance of fibrous tissue in the textures seems to be well adapted to the rheumatic poison and, here, too, occur frequent recurrences. In the diseases of the iris, we have certain characteristic symptoms which aid us in the rheumatic diagnosis. There is generally an antecedent rheumatoid history, or, again, there may be none, and the iritis may be the precursor of it. Again, one is affected at a time and later the other goes through the same manifestations.

The iritic pain in rheumatism is especially prone to radiate in a fan-shaped manner, and is paroxysmal in character, while the lacrymation is well marked. The exudative changes are always slight, unless there have been many preceding attacks. The posterior synechiae are long and thin, and the unpigmented iris is particularly bright. There is generally not the keratitis complicating it as in the syphilis iritis; on the anterior capsule too, there is but slight tendency toward the formation of pigment. Fortunately, choroidoretinitis is not often associated with rheumatic iritis. Though the liability of recurrence is so manifest in rheumatic iritis, still it is very fortunate that a favorable prognosis can usually be given as regards a return of good vision.

Again, we have a so-called Neuralgic Iritis in which there is acute pain radiating from branches of the fifth nerve. This pain is especially marked at nightfall, and is out of all proportion to the subjective symptoms of the disease. Another form is the Exposure Iritis. Here the mildly acute attack comes on while the patient is facing a sharp wind or in leaving a heated room, but the inflammation as quickly subsides, though prone to recur on every repetition of similar conditions. In all these rheumatic forms of iritis there is little lymph thrown out, and therefore there are few great structural changes.

The form called the Quiet Iritis is rather less frequent as a rheumatic complication, and although there is little pain, and even less ciliary congestion there is more marked diminution of vision. A characteristic condition frequently seen in rheumatic iritis is for the papillary border of the iris to be fringed with a narrow band of grayish lymph, which is generally incomplete at its upper part of the circle, and roughly resembles a horseshoe in outline. Here, as in the other

forms, there are frequent recurrences and sight is not affected. In short, when we find any of the above forms of iritis present and but one eye affected, we should be sure to seek for the rheumatic history, and treat it accordingly. Especially is this to be emphasized if this same iritis be a recurrent one.

Irido-cyclitis, of rheumatic origin generally appears in the eye corresponding to the side attacked. The other eye is later involved in like manner.

In choroiditis and in all the varied forms of retinitis, we can hardly with certainty lay great claims at the door of rheumatism as a cause direct or indirect. It is, perhaps, by an extension of inflammation from the adjacent sclera, when involved, that such argument could be religiously adhered to.

In glaucoma we must remember the various theories for its cause, now in vogue. (1) It is a disease of the iris, perhaps of rheumatic origin fundamentally, wherein the iris itself adheres to the periphery of the cornea, thus preventing the proper filtration at the angle of the anterior chamber and thereby causing a retention of fluid. (2) As Snellen suggests, a constitutional cause, wherein there is a great increase in secretion, but, more important still, a seemingly marked disturbance in the necessary excretion. (3) According to Stilling it is a hardening of the fibrous scleral coat surrounding the papillæ, through which the waste material escapes. By any one of these three theories, therefore, we might justly claim that rheumatism plays a very important part, perhaps more than is at present credited to it. It certainly would be a blessing, if, by the persistent administration of the salicylates, we could ward off an insidious approaching glaucoma!

Referring to diseases of the crystalline lens, I fear it may be more difficult still to prove rheumatism an exciting factor. Like diseases of the vitreous, gout bears a more close and intimate relation.

Papillitis, with its innumerable list of etiological factors, has rheumatism frequently mentioned as an active cause. In such cases the neuritis would, of course, be molateral; and, likewise, the orbital form of neuritis. Here, strangely, this disease, unless it is due directly to one of the infectious exanthemata, has for its best authorized treatment the salicylates and merculo-iodide combinations. Retrobulbar neuritis, or optic peripheral neuritis, as it really is, generally is recognized to be of rheumatic origin and responds to rheumatic treatment.

Finally, as to the eye muscles, the external rectus is the one most often affected in rheumatism, and the paralysis resulting is generally peripheral. This same external rectus, too, is the more frequently involved muscle of the whole eye group, from any cause. The muscle paralysis generally comes on shortly after exposure, or "catching cold," and especially in those prone to rheumatism. That of the one eye is involved at a time, and its response to the salicylates is splen-

did. I have seen cases of external rectus paralysis with the common resulting homonomous diplopia recover entirely and have a return of perfect binocular vision.

In conclusion, I have tried to show that there may be resultant from an attack of acute articular rheumatism, an inflammation of wellnigh any of the tissues in or about the eye, and that these same structures frequently show a peculiar susceptibility toward the rheumatic poison. Also, that these textures when involved, quickly respond to the recognized rheumatic remedies.

Both the general practitioner and the specialist are necessary in arriving at a correct diagnosis, and here this diagnosis is of the greatest importance. We want entire cooperation and union of action between them, in order that our afflicted patient may have the entire benefit of a cure from rheumatic diseases of the eye which, if properly recognized, could not only be cured, but would prevent other complications in themselves beyond our aid. And even after the diagnosis has been suitably arrived at and the proper constitutional remedy applied, the oculist must needs give long and faithful treatment and care in clearing up the local and temporary lesions produced previously by the general poison. It is in this way alone that the desired result can be accomplished and the eagerly sought for satisfaction, and even pleasure, both to our patients and to ourselves, be arrived at.

I shall feel gratified, therefore, if even though I may not have exploited a new theory or added anything novel or of great worth, yet have emphasized existing truths and conditions, and also led you to consider, perhaps, more carefully than before, the influence rheumatism plays in afflictions of the eye.

MEDICAL PROGRESS.

MEDICINE.

Headache.—Headache is such a frequent symptom of so many morbid states, both constitutional and local, that its presence should always lead to a thorough investigation in order that its cause may be definitely located. Many patients are made chronic invalids because the headache itself is treated and temporarily relieved while the ultimate cause remains as efficient as before. W. M. LESZYNISKY (Med. Rec., Jan. 3, 1903) in reviewing the various causes of this symptom says that we know almost nothing of the structures in which the pain of headache is felt, or the mechanism of its production. This symptom must not be confounded with true neuralgia in which the pain is paroxysmal in character and directly limited to the course of the nerve and its distribution. The idea that the location of the pain in any particular region of the head is always directly related to some underlying, adjacent or remote pathological process has not been substantiated by clinical experience. In a large majority of instances the headache is undoubtedly due to toxemia resulting from intestinal or gastric disturbances. Ocular defects and neurasthenia are two other very efficient factors. Among other causes which may be mentioned are rheumatism, gout, diabetes, alcoholism, lead, naso-

pharyngeal lesions, uterine and ovarian diseases, anemia, or hyperemia of the brain. A careful investigation of the entire organism is essential in every case, the most important element in the treatment of patients with headache being the recognition of the cause; as the pain is more often dependent upon some indulging constitutional condition than upon organic intracranial disease. Undoubtedly the unscientific and general use, by the laity, of coal-tar products and opiates for the relief of headache has resulted largely from the disinterested way in which members of the medical profession frequently treat this seemingly unimportant and familiar symptom.

Pellagra.—The opportunity has been afforded to A. PORRAS (Rev. de Med. y Cir. Prac., Jan. 28, 1903) of studying this condition under unusually favorable circumstances; and while he does not claim to add anything new to the knowledge of the disease, the very complete description he offers is of more than usual interest to the general medicine reader who has not access to the monographs to which the literature of this subject is chiefly limited. The author describes the affection as an essentially chronic diathetic disease, the manifestations of which are seen in the spring, when an erythematous redness appears upon the dorsum of the hands, and sometimes upon the neck and feet as well as any other part of the body which is exposed to the sun. This lasts for about twenty days and usually terminates in desquamation. Tumefaction, burning, smarting pain and itching accompany the erythema in its more severe forms, and it may even go on to the formation of vesicles and bullæ, which latter leave permanent scars. These patients are usually dyspeptic, highly nervous and irritable, and suffer much from insomnia. As the summer advances, the patient improves, as he does during the remainder of the year; till, at the approach of spring, the same train of symptoms appears with increasing severity in the successive recurrences; gastro-intestinal disturbances becoming more marked, the patient becoming melancholic, taciturn, utterly unable to sleep, and possibly developing suicidal tendency. Aphthous sores appear upon the tongue, inner surface of the cheek and fauces; the lips crack and peel so that they may be entirely denuded of epithelium, and tinnitus and vertigo are most distressing. Pain in the spine, extending to the lower extremities, is intense. Muscular control is lost so that in walking the patient lurches forward, and would fall if not supported. Paralysis or semiparalysis ensues, which becomes more marked as general weakness increases, and there may be involuntary emissions of urine and feces; the patient finally succumbing to the disease. The etiology of the affection is unknown; but most of these patients are alcoholics. But little can be done to ameliorate the condition; treatment being entirely symptomatic. Hygienic care and good feeding are, however, helpful prophylactic measures; as those whose systems are low, most readily fall victims to the disease.

Postvariolic Osseous Complications.—In the recent epidemic of smallpox at Lille, a certain number of cases developed osseous complications, such as are seen in typhoid and other infectious diseases. In the experience of VORRUIEZ (Jour. Sci. Méd. de Lille, Feb. 21, 1903) these affections may be divided into two classes: Variolic osteitis, which is manifestly dependent upon the virus of variola, develops slowly during convalescence and is characterized by localized enlargement of the bone and pain which is increased by pressure or motion. There is neither redness nor heat in the skin over the lesion. The diaphysis of the long bones is affected, and the condition is benign; resolution without suppuration being the rule. To the second class belongs what the author calls postvariolic osteomyelitis.

This is due to secondary infection—usually streptococcal—and affects the ends of the long bones; a purulent arthritis frequently resulting. The gravity of this condition varies. In some cases, a veritable pyemia develops; but in the majority, healing follows evacuation of the abscess, without elimination of sequestra.

Gastrectasia Atonica.—In a case of atonic gastrectasia, with intestinal peristaltic weakness, and with neurasthenic manifestations persisting for a year, and aggravated by an attack of violent emotion, G. VASSALE (La Sem. Méd., March 4, 1903) employed the extract of the suprarenal bodies. He administered it in a daily dose of from 40 to 50 drops, and continued the treatment for two weeks, succeeding in this time in bringing about considerable improvement in the gastro-intestinal symptoms, and in the general condition of the patient. This fact is in agreement with those recently discovered, and based upon the fact that these glands contain a substance which maintains cardiovascular tone, and excites contraction of the smooth muscle fibers.

Acute Hemorrhagic Nephritis from Potassium Chlorate.—The susceptibility to potassium chloride varies widely; in some cases eight to ten grams being taken with impunity, while relatively small doses will produce symptoms of intoxication in others. A LORAND (Jour. Med. de Bruxelles, March 5, 1903) reports the case of a man who after taking potassium chloride in the form of pastilles 15 cgm. each before meals (eight being taken daily) for the relief of angina, developed an acute hemorrhagic nephritis. The author believes that the noxious influence of the drug was attributable to its ingestion in the fasting state, and in support of this idea, quotes Mering's statement that the effect of potassium chloride is always more deleterious when taken upon an empty stomach. A diuretic water which the patient had taken, is also thought to have intensified the effect of the drug.

Gangrenous Destruction of the Pituitary Body.—To illustrate the influence which the integrity of the pituitary body exercises upon the integrity of the blood through the adrenal glands, E. WASDIN (Phil. Med. Jour., March 7, 1903) presents a clinical case with gangrenous destruction of the pituitary body following fracture of the sphenoid bone with subsequent infection. The patient was a healthy male of twenty-four years, who presented a fracture of the lower jaw, and after a time symptoms of extreme degeneration of the blood, hematogenous jaundice, purpura, changes in the red cells. Death came on 22 days after receiving the injury and previously the skin had become a deep bronze yellow, the right half of the face was greatly discolored and edematous, eye protruded between swollen lids. Autopsy showed a fracture of the body of the sphenoid with infection resulting in gangrene of the lobes of the pituitary body. There was also some gangrenous cerebral tissue at the base involving Gasserian ganglion, contents of sella turcica, and extending into the orbit. The character of the symptoms before death show the influence of this gland through the cervicosympathetic system over the secretion of the adrenals and of the value of the latter in the preservation of the integrity of the blood. The diagnosis had been a puzzle before autopsy was done.

Function of the Ductless Glands.—The importance of these organs to the vital functions and their relationship as such to disease and therapeutics has been the subject of an investigation extending over fourteen years by C. E. SAYOUS (Phil. Med. Jour., March 7, 1903). His conclusions are most ingenious and the questions involved embody some of the most intricate problems of physiology, among the foremost being the knowledge of the method by which the cellular elements

out of which all tissues are built utilize oxygen. The paper is lengthy and detailed, the conclusions being as follows. When the venous blood reaches the pulmonary alveoli, the marked affinity of the adrenal secretion in the plasma for oxygen causes it to absorb this gas from the alveolar air. The carbonic dioxide in the blood is thus forcibly replaced by oxygen and expelled with corresponding vigor. The red corpuscle then bathe in an oxygen laden medium and their hemoglobin becomes converted into oxyhemoglobin. The physiological function of the internal secretion of the adrenals is to combine loosely with the atmospheric oxygen in the lungs and to endow the blood-plasma with its oxidizing properties. The oxidizing substance thus formed in the lungs the author has named adrenoxin. A study of the experimental physiology of the pituitary body and of the ultimate effects of sympathectomy and a rather extensive research into the pathogenesis of acromegaly and other pituitary disorders, having likewise pointed to phenomena directly ascribable to functional disturbance of the adrenals, it became clear that the governing center of the latter was situated in the anterior pituitary body which is directly connected with them by the cervicothoracic ganglia, the splanchnic nerves and the semilunar ganglia of the sympathetic system. A long line of research into the physiological action of some forty of the more important drugs and venoms developed the fact that the actions of all poisons, including toxalbumins and venoms is similar to the phenomena that ensue after the experimental removal of both adrenals or hemorrhage into these organs. The same observation was extended to disease toxins. It is probable, therefore, that all general symptoms witnessed in disorders in which the blood is invaded by a poison of any kind are, in reality, manifestations of overactivity, insufficiency or inactivity of the adrenals. The thyroid gland, the anterior pituitary body and the adrenals are functionally interdependent and constitute the "adrenal system" which has for its purpose to sustain physiological oxidation and the metabolic activity of all tissues. Considering the function of the leucocytes in these processes, he believes that the mitome of these cells is not made up of mere protoplasmic threads but of canaliculi for blood plasma and granules. From his studies he concludes that neutrophile leucocytes form peptones, which combine with "adrenoxin" to sustain general metabolism, i.e., the vital process. Also myosinogen which combines with adrenoxin to supply contractile energy to muscles, and fibrinogen which combines to supply heat energy to the blood. Eosinophile leucocytes form hemoglobin which combines with adrenoxin to insure its storage in erythrocytes. Basophiles form myelin, the active principle of which, lecithin, combines with adrenoxin to develop nervous energy. The other internal secretion to which reference is made is that of the spleen and pancreas. The greater part of the trypsin of the organism is formed in the splenic vein by which it reaches the portal vein and continues in the blood-stream the process begun in the intestinal canal. The main function of this secretion is to protect the organism from the effects of bacteria, their toxins and all toxic albuminoids, including vegetable poisons and venoms. The posterior pituitary body may be regarded as the general center of the nervous system and the co-center of the anterior body in sustaining the cellular metabolism of all organs. In discussing the ductless glands in disease and therapeutics he states that adrenal stimulants will often prove inadequate if the alkaline salts are not administered simultaneously, while the use of the salts without adrenal stimulation will prove of benefit for a time only. The power of the organism to antagonize the constitutional effect of pathogenic

germs, their toxins and other poisons, is directly proportionate, everything else being equal, to the functional efficiency of the adrenal system. It follows, therefore, that when a favorable reaction does not follow the use of saline solution, it is because the adrenal system also requires direct stimulation, such as that afforded by strychnine, digitalis, etc., subcutaneously. These facts seem to be supported by clinical experience in various "toxine" diseases. The author awaits corroboration of these theories and will publish further contributions.

Treatment of Tropical Dysentery with Sulphur.—The value of sulphur in this disease, as observed in a series of cases under treatment at a natural spring on one of the islands of the Philippine group, is made the subject of an interesting report by T. H. WEISENBURG (Phil. Med. Jour., March 14, 1903). Three acute and fifteen chronic cases of amebic dysentery were treated. The acute cases were given one bath daily and plenty of the water to drink. In a month two were cured; the third, an alcoholic, had to be returned to medicinal treatment. The chronic cases were given two baths daily and the water to drink and all were cured in from three to six weeks. The springs contained water at 22° F. and 92° F., with a large percentage of sulphur. The dhobie itch also disappeared as a result of the baths.

Silver Nitrate Injections in Tuberculosis.—A collective investigation concerning the value of this method in the treatment of pulmonary consumption is reported on by T. J. MAVS (Phil. Med. Jour., March 14, 1903). Fifty-five cases are recorded, treated by twenty-one observers. The injections were given in the neck over the affected lung. The collective results seem to show that the injections possess a decided antagonism to the complex pathological processes known as pulmonary consumption. Cough was improved in 44 cases and ceased entirely in 6, the effect being probably due to a certain degree of stimulation produced by the injection in the neck on the vagus and its ramifications, promoting the tone and resistance of this nerve. Vomiting, when present, is relieved or abated. Night sweats were present in 42 cases; they were improved in 27 and ceased altogether in 14. The general strength is usually improved and the gain in weight is often rapid, all classes of cases, whether incipient or advanced, participating in the increase.

Bacteriological Examination of the Blood in Scarletina.—Examinations of this character have been made during life in cases of scarlet fever with especial reference to streptococcus infection by L. HEKTOEN (Jour. Am. Med. Assoc., March 14, 1903). Many writers have demonstrated the presence of this infection in fatal cases, but comparatively little is known of the presence or absence of streptococci in the blood of non-fatal cases, mild or severe, complicated or uncomplicated. The author's observations were made with blood secured by puncture of some vein at the elbow after careful disinfection of the skin and inoculated in various media. One hundred cases were examined and the relatively larger number of streptococcal growths were obtained from the more severe cases. In these there also may develop local complications and clinical signs of general infection, such as joint inflammations, but even in the grave cases of this kind, spontaneous recovery may take place. The streptococci may also be found in the blood of cases that run a short, mild and uncomplicated clinical course (4 in 45). It was also seen that streptococcemia may not be demonstrable in fatal cases. The theory that scarlet fever is a streptococcus disease does not seem to receive any direct support from this investigation and the author believes the best hypothesis for the etiology of this disease is that

two infections coexist. The primary infection has not been demonstrated and the secondary is the streptococcus infection which may be regarded as practically constant. The relation of one to the other still remains to be determined.

Treatment of Progressive Paralysis and Psychoses.—An interesting method of treating toxic and infectious psychoses with a specially devised saline infusion is advanced by J. DONATA (Deut. Med. Woch., No. 4, 1903). He employs an "artificial blood-salts solution," which contains in 1,000 gms. of distilled water, .25 gm. of potassium sulphate, 1 gm. of potassium chloride, 6.75 gm. of sodium chloride, 4 gm. of potassium carbonate, and 3.1 gm. of crystalline sodium phosphate. This is believed to be absolutely isotonic for the blood, and corresponds to the total ash of the blood omitting the calcium and magnesium which would be precipitated in such a solution. The blood corpuscles even if left in it for twenty-four hours are not affected. The fluid is injected through a Dieulafoy aspirator, 500 to 1,000 c.c. every three or four days under proper aseptic precautions. He employed it in six cases of progressive paralysis (type not stated). In one, the patient was enabled to return to his occupation of traveler, completely restored; four others showed marked and permanent improvement, and one was not affected. The method was also found of value in improving cases of cerebral syphilis, tetany and melancholia, the earlier the application the better the results.

Malta Fever.—The isolation by Bruce of the specific organism of Malta fever—*Micrococcus melitensis*—from the spleens of nine patients who had succumbed to that disease, placed the study of the affection upon a more definite working basis. The knowledge thus acquired has been of practical value, notably in the case described by TORRAS Y PASCUAL (Rev. d. Cien. Méd. d. Barcelona, No. 11, 1903). A case came under his observation in which, as there was a question of typhoid fever, Widal's test was used, with the result that agglutination was not obtained. Treatment of the patient's blood serum with a pure culture of the *Micrococcus melitensis* caused the appearance of the agglutination phenomenon in a few minutes; thus establishing the diagnosis of Malta fever. The diagnosis of this condition is said to be difficult in the early stages, but by the second week, a well-marked agglutination reaction may be obtained; this, with the characteristic temperature curve—35° to 40°, with daily oscillation of two to three degrees—and the general symptoms, including headache, diarrhea, gastric disturbance with perhaps bilious vomiting, serving to distinguish a case of Malta fever.

SURGERY.

The Surgery of the Biliary Passages.—Probably no one has added so much that is new and of extraordinary value to this important part of abdominal surgery than A. W. MAYO ROSSON (Brit. Med. Jour., Jan. 24, 1903). So perfect has his technic become that he is able to reiterate what he stated in the preface in the first edition of his "Diseases of the Gall-Bladder and Bile Ducts," that except in the presence of infections or malignant disease, the mortality was only 1% per cent. Since writing this, his methods have changed somewhat, as well as his views on the subject of cholelithiasis. Once formed, gall-stones are insoluble so far as medicine goes, though much may be done by medical and general treatment for the relief of the catarrh which is always present and which indeed, may be indistinguishable from true gall-stone attacks. Medical treatment must therefore always be given a very generous trial. The operation is in the first place almost always simply exploratory, the actual operation being deter-

mined by the condition found. The surgeon, therefore, must needs be prepared to do any operation which he may be obliged to use. In the matter of preparing for operation, it is of the utmost importance that it shall be done in a hospital, because there the surgeon has much better control of the very important after-treatment. So far as instruments go, a gall-stone scoop is the only special appliance he employs. His sutures and ligatures are of formalin catgut prepared by the xylol process. Celluloid thread, which has recently been introduced, he finds preferable to silk, it being much stronger. It is of course non-absorbable and is consequently used only in effecting the serous suture in stitching the incision in the duct. He believes that except in this position no non-absorbable sutures should ever be used. Gloves are used by all assistants. Calcium chloride is given the patient if there should be chronic jaundice or tendency to hemorrhage, because he thinks that in all cholemic conditions the blood becomes so altered that its coagulability is seriously diminished. The doses should be heroic or the drug is valueless,—30 grains by the mouth before operation and afterward 60-grain doses by the rectum three times a day for several days. The patients are always enveloped in cotton wool. This is conveniently accomplished by making a suit of gamgee tissue, which is made for each individual patient at the cost of an hour's work. In operating, he now makes his incision over the middle of the right rectus parallel with its fibers. This is to be preferred to a vertical incision through the linear semi-linaris. If the gall-bladder is distended, a two or three inch incision suffices, but if it is necessary to explore the deeper ducts instead of carrying the incision downward, as he formerly did, he now proceeds upward to the interval between the ensiform cartilage and the right costal margin. This gives better view of the field. When the duct is incised, the bile usually flows freely. This is probably infective, but it is caught scrupulously on sponges. The stones are scooped out by the scoop and a probe is passed down into the bowel. If the gall-bladder is contracted and the pancreas shows evidence of chronic pancreatitis, he places a drainage tube directly into the duct, the tube being held by a catgut stitch which will hold for a week. Otherwise, if the size of the gall-bladder will permit it, he fixes a tube into the fundus of gall-bladder in the same way, thus avoiding pressure on the newly sutured opening in the duct. All manipulations of the duct should be avoided. By his present technic he is enabled to deal with the whole of the bile passages as if they were a straight tube close to the surface. This he considers a great improvement on his previous method of operating. The after-treatment is simple, but should be rigorously adhered to. His chief deductions are that we should operate before serious complications have ensued and that the operation should be thorough, expeditious and careful.

Prevention of Postoperative Ventral Hernia.—The many methods of accomplishing this result already suggested, and the many that are constantly appearing in the medical press prove that no one has yet solved, in the fullest sense, this difficult problem in surgery. J. HAHN (Z'blatt f. Chir., Jan. 24, 1903) lays the greatest possible stress upon the following points: (1) As distinctly a layer-suture as possible, consisting of first, peritoneum with the transversalis fascia, then of the aponeurosis of the abdominal wall, with the exception of the muscles themselves. The muscles must be omitted for the reason that under tension of sutures the delicate fibers are cut through either at once or after a few days. The fibers of the aponeurosis, however, withstand tension without damage. Finally, the skin is su-

tured as a separate layer, and when there is a thick layer of fat beneath it requires an extra layer for itself. His second step to secure healing of the wound is to employ absolutely sterile silk. It is possible to employ another thoroughly sterile and equally absorbable material, such as silkworm gut, which may be healed into the tissues as if it were part of them. He never employs catgut. His third consideration is to secure total retention of the sutures. It is for this purpose that he insists so strongly upon absolute asepsis.

Treatment of Patellar Fracture.—A modified form of the open method of treating this condition, with a report of 28 cases, is described by H. BARLOCHER (Correspbl. f. Schweiz. Aerzte, Feb. 15, 1903). All the patients were operated on the first or second day after the injury. The incision is made in the median line over the patella, the fragments, if necessary, freed from clots and soft tissues. The joint is cleaned out with *dry* (gauze) sponges. The capsular tear is then closed on each side of the patella by several strong silk sutures which approximate the two fragment. A row of silk sutures is then introduced which include the periosteum and the wall of the prepatellar bursa. The skin incision is closed with catgut sutures and drainage unless severe bruising were present is usually omitted. Immobilization was kept up for 4 weeks and then active movements in bed were immediately instituted, together with massage and faradization. In another week the patients were allowed to walk. The latter points for the chief contention of the author's method. In one case suppuration followed and a stiff knee resulted. The others all had useful legs without stiffness or interference,—in two cases ligamentous union took place, one being a second fracture. Bony union was demonstrated in the remainder by the X-ray.

Cocaine and Adrenalin for Anesthesia of Inflamed Tissues.—Recognizing that cocaine sometimes acts unfavorably on inflamed tissues, M. Bottier determined to try the effects of adrenalin associated with cocaine for securing anesthesia for general surgery. M. E. Fossey (La Sem. Méd., Feb. 24, 1903) applies the same principle to general surgery by employing injections of a solution of cocaine 0.5 per cent., modified by a few drops of a 1-per-cent. solution of adrenalin, usually in the proportion of 6 to 12 drops in every 4 to 20 c.c. of cocaine, and never exceeding 15 drops in 25 c.c. of the cocaine solution. He begins by infiltrating the skin along the line of his incision, thus proceeding along the walls of the abscess of the outlying region of the inflamed tissue. Very rapidly there appears a strong vasoconstriction and at the same time pain disappears so far as concerns extirpation of the diseased tissue, but great pressure and strong traction, however, remain painful. Another advantage is that the blood-loss is made very little. He has now employed this method in a number of cases, without a single unfavorable result.

A New Method of Treating Fractured Femur.—The difficulties usually encountered in fracture of the femur are claimed to be overcome by J. P. L. MUMMERY (Lancet, Feb. 28, 1903) by the following splint. An extension stirrup is applied with strapping from ankle to knee in the usual way, and the stirrup is fixed around the footpiece of a McIntyre splint, the thigh-piece of which should be long enough to reach well up to the fold of the buttock. On the under side of the thigh-piece, and close to its middle margin, a metal hook is fixed. The best splint is the McIntyre, made so that the length of the footpiece may be adjusted by means of a thumbscrew, with a flat metal hook attached to the under side. An anterior splint for the thigh is then made of Gooche's rubber, or, better still, gutta percha, padded with a double layer of gauze, and fixed

to the thigh with webbings passed round the splint. The fracture having been set, the splint is now adjusted, with the knee bent nearly to a right angle, and the limb is fixed with bandages or webbings, as the case may be. A leather strap, which should be about an inch in breadth, is now passed through the lugs on the carriage of a Salter's cradle, then around the thigh-piece of the splint, and caught in the hook of the under side. The buckle is then brought to one side and the strap is tightened until the buttock and thigh of that side are lifted off the bed. When the strap is sufficiently tight, it should be possible to pass the open hand beneath the buttock on the injured side. Another splint is then passed around the lower end of the splint, and fixed to the cradle to support the leg. This strap must not be too tight, or it will depress the upper end of the splint. The upper strap will need tightening to make up for the inevitable stretching. All that is necessary to examine the fracture is to remove the anterior thigh splint. By this method a very powerful extension may be easily secured, and, with a little attention, will remain efficient. The weight of the thigh and buttock draws the upper fragment away from the lower, which is prevented from moving by the extension strapping and stirrup around the foot-piece, and by the bent position of the limb. The chief advantages of this method are ease in nursing, less tendency to movement at the site of fracture, general comfort and simplicity, and, finally, that the flexed position of the leg upon the thigh aids in maintaining good apposition by releasing the strain upon the flexor muscles.

Cardiac Tonics Before Operation.—Recognizing that fear of the operation sometimes produces cardiac weakness and thereby influences the evil effects of prolonged anesthesia, L. FEILCHENFELD (*La Sem. Méd.*, Feb. 18, 1903) has been employing through several years tincture of strophanthus, in five- or six-drop doses, several times a day, for several days preceding intervention. Similar observations are made by other authorities, some of whom use strophanthus and digitalis in fifteen-drop doses, four times a day. Feilchenfeld has carried his observations farther, and concludes that the surgeon should always examine the heart repeatedly before operation, not only as to the condition of the valves, but also of the cardiac muscle. In robust subjects, this preliminary treatment with cardiac tonic might be useless, but, on the other hand, if there is a nervous irritability of the heart, it had best be overcome. Weakness of the heart muscle, murmurs, indistinctness of the apex beat, and a small, rapid pulse, are among the more common indications for stimulation. He has found that the good effects of this method are shown by the slowing of the pulse, decrease in the muscle symptoms, and improvement in sleep and appetite. He states that one should have a pulse of 80 before beginning narcosis. In addition to these cases, there are others in which there already exists an alteration of the cardiac muscle more or less distinct. These naturally require more energetic treatment along the same line.

Surgery of Gall-bladder.—It is estimated that at least ten per cent. of all people have gall-stones, but since only about five per cent. of these ever develop symptoms from the stones, the simple presence of such foreign bodies furnishes no indication for interference, and, furthermore, since the percentage of recoveries from gall-stone attacks is so great there is abundant reason for the conservatism which has always marked the treatment of such cases. W. J. MAYO (*Med. Rec.*, Feb. 21, 1903) shows how important a factor infection is in causing gall-stones and especially in exciting subsequent attacks of colic and cholecystitis. It is true that the problem of interference is a much more difficult one to settle than that of the similar condition, appendicitis.

The patient is along in years and often, by reason of degenerative changes or adipose tissue, is not a good subject for operation, and, again, death does not often come with the tragic suddenness which often characterizes appendicitis. The causes which convert latent calculi into active ones are infection and the mechanical interference with drainage from the gall-bladder. Both these causes are usually present, depending upon one another, for it is usually the germs which excite the inflammatory obstructive products or induce the contractions which engage the stones in the mouth of the cystic duct. The question for consideration is whether in view of the possibility, nay, probability, of further extension of the trouble, it is not wise to remove active gall-stones early. The results of such operations are remarkably good. In over 2,000 operations of this kind in the hands of six surgeons, there was not a single instance of reformation of gall-stones. Complications are due to changes in the wall of the gall-bladder or involvement of the bile-ducts, and the stones may then become only an incident in the process which they initiated. The difficulties in the way of operation during an acute attack are much increased. Infection of the liver ducts introduces an element of uncertainty in the prognosis, and to this cause the majority of deaths after operation may be traced. Every gall-bladder presenting active symptoms should be looked upon as an infected organ and be drained. Only in the latent cases is it safe to do the ideal cholecystotomy. Drainage is continued till the bile is normal, and as the fundus is permanently elevated, gravity drainage through the cystic duct is even better than in the normal state. If the walls of the gall-bladder are thickened, and especially if the cystic duct has been obstructed, the gall-bladder should be removed if possible. If the liver ducts are not entirely free from inflammation the cystic duct should not be tied, for drainage of bile from the liver ducts must be provided for. Kehr says that the hepatic ducts require drainage in at least thirty-seven per cent. of cases. In the management of such cases it is recommended that the mucous membrane of the bladder be removed, the peritoneal, and as much as possible of the muscular coats be left intact. This gives the temporary advantage of free drainage for the hepatic ducts and the permanent effects of cholecystectomy. The mucous membrane is readily removed from the region of the cystic duct, but is firmly adherent at the fundus. For this reason the fundus may be cut away, the edges being stitched to the abdominal wall.

Postoperative Acute Yellow Atrophy of the Liver.—This is a peculiar sequela of operations, and several cases of it are reported by M. BALLIN (*Ann. of Surg.*, March, 1903), who states that, as to the treatment, prophylaxis is of primary importance. The prolonged use of chloroform should be avoided, especially where alcoholism or other chronic ailment has probably caused catarrh of the liver ducts. It should be avoided especially in the presence of inflammations of the viscera. Narcosis may be begun with chloroform, and later ether substituted. One must consider this serious liver infection, at least as partially a consequence of chloroform, for Eisendrath states that chloroform narcosis should never be continued for over one hour, because of its degenerative effect upon the heart, liver and kidneys. If the case be one of malignant jaundice, the prognosis is necessarily unfavorable; recovery is the exception. He reports one case, which was not fatal, probably due to venesection and saline infusion. Malignant jaundice is the consequence of destructive disease of the liver, just as uremia is of degeneration in the kidneys. He was led to try this method of treatment through success had with it in cases of eclampsia.

Blank Cartridge Wound Infected with Tetanus. Excision. Recovery.—The frequency and fatality

of tetanus originating in blank cartridge wounds, especially in children, makes the following case, reported by J. B. BAIN (Ann. of Surg., March, 1903), of general importance. A thirteen-year-old girl was shot in the palm of the right hand with a blank cartridge. Immediately after the injury the wound was washed out with warm water at home and the patient was sent to the hospital, where it was cleaned again with soap and water, chlorinated soda 1-15, and corrosive sublimate 1-1,500, and about 55 minutes after the injury the following operation was done: A tourniquet was applied to the forearm and an elliptical incision was made about the wound of such extent as to include the powder-stained area, with a surrounding area of normal tissue. The powder grains were imbedded in tissue, muscles and nerve sheaths. All such tissue was carefully removed by carrying the dissection down to the interval between the third and fourth metacarpal bones, as far as the fourth dorsal interosseous muscle. The wound was then washed with corrosive sublimate and a wick inserted and its edges partially approximated with sutures. Drainage was continued twenty-four hours and then removed. With the usual antiseptic treatment the wound healed in a month, and nearly three months later the patient remained well. Tetanus bacilli were found in the tissue removed. The success of this method of treatment renders note of it important.

Knife Blade Removed from Lung.—One is sufficiently familiar with bullets in the chest cavity, but not with knife blades, especially such as belong to the common jack-knife class. J. F. BALDWIN (Ann. of Surg., March, 1903) reports a case of this character. The patient was a deputy sheriff, and had been stabbed by a prisoner with an ordinary cheap jack-knife. The blade broke off in the lung. The wound of entrance was just below the axilla, and was inflicted three months before he first saw the patient. At this time he was in a condition similar to that of advanced consumption, with signs of consolidation about the wound and a copious purulent discharge. He showed the ordinary signs of infection. Three radiographs, showing anterior, posterior and lateral views, located the knife-blade, which was removed without much difficulty after resecting one inch of an overlapping rib.

Primary Retroperitoneal Solid Tumors.—A differential diagnosis of these conditions concerns, according to R. DOUGLAS (Ann. of Surg., March, 1903), innocent growths and malignant growths. The former are recognized by their long duration and comparative absence of symptoms. The fatty tumors are especially distinguished by their mobility more than elasticity and fluctuation. The malignant tumors have rapid growth, produce complications, as ascites and edema, and quickly entail cachexia. Tumors of the solid viscera, spleen, kidneys and liver may be mistaken for these growths, yet the functional and constitutional disturbances and carefully applied physical tests may make the diagnosis. The prognosis depends, of course, upon the seat and form of the tumor. Contraindications to operation are pronounced cachexia, metatarsis, manifest universal attachments which may interdict even exploratory incision. Sometimes, after the abdomen has been opened, the relation of the tumor within the abdomen will be found to be such as to prevent further work.

Excision of the Superior Maxilla under Medullary Narcosis.—A second instance in which this operation was done under this form of anesthesia is reported by A. W. MORROW (Am. Med., March 21, 1903). The patient presented a carcinoma of the right jaw. A half grain of cocaine hydrochlorate was introduced by the usual method into the subarachnoid space between the third and fourth lumbar vertebrae. Analgesia was complete in 20 minutes, the pulse varied from 90 to 100,

respiration was normal, and no unpleasant effects were observed. The entire superior maxilla and the soft palate was removed, the hemorrhage being readily controlled by pressure and the Paquelin cautery, and no blood was swallowed or inspired. The author claims many advantages, especially in operations about the buccal cavity. The anesthetizer is not in the way of the operator. Suffocation and later pulmonary complications from the inspiration of blood and secretions are avoided. It can be used in acute diseases of the heart, lungs, or in kidney complications. The shock of the operation is diminished and severe after-effects are absent. He has used this method in 929 cases, 76 of which were operations above the diaphragm and the analgesia was as complete as in the lower extremities. He is convinced that its greatest field of usefulness is for operations in such localities where there is danger of blood and secretions entering the lungs.

Operative Treatment of Goiter.—A series of 12 successful cases operated on by the method of Kocher is reported by I. OLMSTED (Phil. Med. Jour., March 21, 1903). The original method is followed, differing only in the matter of drainage and suture. The operation is done under cocaine, and the important points are the absolute asepticism, careful ligation, avoiding the wounding of the gland, and the preservation of the recurrent laryngeal nerve. Of the 12 cases, 11 were simple, and one exophthalmic goiter. Drainage was only used in four cases and then abandoned. Subcuticular silver wire suture is preferred, and should be removed on the fifth day, together with the first dressing which consists of silver foil and gauze. The second dressing is of gauze and collodion. One case of Grave's disease was operated on and three others which presented symptoms, all improved and symptoms disappeared.

Congenital Unilateral Renal Defects.—The greatest importance in the diagnosis of these conditions is attached to catheterism of the ureters by G. J. WINTER (Arch. f. klin. Chir., V. 69, H. 3), because by this means one is enabled to collect fresh urine from each kidney, after which each specimen may be examined and a comparison made as to the physiological conditions of the organs. It is therefore necessary to take the greatest possible care in this examination to determine the functional activity of the kidneys. Since the diagnosis of unilateral kidney disease is possible, no effort should be spared to make it. So far as the treatment of the diseases of a solitary kidney are concerned, he states that calculus, hyponephritis, paranepritis, suppurative nephritis, and suppurative paranepritis and perinephritis are to be treated only by surgical measures.

Intravenous Injection of Collargol.—The employment of this drug in a case of septic parametritis is made the subject of a report by JAENICKE (Deut. med. Woch., No. 6, 1903). The dose was 8 c.c. of a one-per-cent. solution of Credé's collargol injected into the vein at the elbow. The temperature became normal in 36 hours and was only increased by the development of a venous thrombosis in the left leg, which disappeared spontaneously in a few days. A tumor as large as a child's head produced by the exudate subsided in 4½ days. The arm which had been injected was painful and helpless for a few days.

Anatomical Obstacles to the Reduction of Old Dislocations of the Shoulder.—The following dictum concerning old, irreducible dislocations of the shoulder is offered by G. DOLLINGER (Deut. Zeitschr. f. Chir., H. 66, B. 3 and 4, 1903). Rather than the usual obstacles to an easy return of the head to the cavity, namely, masses of callus, osteophytes and the like, he has found the difficulty to lie in the retraction of the subscapular muscle. In seven cases he has found the following oper-

ation to correct the difficulty. An assistant fixes the arm with the elbow at right angles and slightly lifted to the front, so that the front part of the deltoid and the coracobrachialis and biceps muscles are relaxed. The skin incision begins at the clavicle, and passes downward parallel with the cephalic vein, a small fraction of an inch to the inner side of it, and terminates at the insertion of the pectoralis major muscle. He now passes by blunt dissection with the finger or a periosteum elevator into the interval between the pectoralis major and the deltoid and reaches the coracoid process. The border of the deltoid, with the vein just mentioned, are drawn outward. Blunt dissection is then carried more deeply, until he has put the coracobrachialis muscle and short head of the biceps to the outer side, the pectoralis minor to the upper side and the pectoralis major to the inner side. In the bottom of this wound is seen the head of the bone, particularly the canal in which the long head of the biceps passes. In the cases on whom he operated, he found this tendon regularly turned out of its path. He found that rotation outward was successful only until the lower tuberosity presented in the wound, upon which was strongly stretched the tendon of the subscapularis muscle. Upon dividing this, he found that reduction was easy.

Cystitis and Tumors of the Bladder in Bilharzia.—The following conclusions as to the results of this rare disease of the bladder are offered by C. GOEBEL (Deut. Zeitschr. f. Chir., B. 66, H. 3 and 4). (1) In severe forms of bilharzia cystitis, suprapubic cystotomy and curetting of the bladder is a palliative means of treatment which frees the patient of his painful symptoms and makes him capable of following his vocation again; (2) in tumors due to bilharzia, suprapubic cystotomy is definitely indicated, because without further treatment it relieves the high degree of pain to which the patient is subject, and leaves a fistula which, although a disadvantage, is certainly a gain when compared with the previous dilemma of the patient. This author places himself against two suggestions as to treatment. Of these, the first is the creation of Witzel's oblique fistula, for the reason that as a rule the walls of the bladder are so diseased as to be too friable to permit of the formation of such. In the second place, the use of the cystoscope in these cases for diagnosis is contraindicated. An examination of the urine, together with very careful use of the sound, is sufficient to make an accurate diagnosis.

Suture of Arteries.—Surgeons have finally ventured to perform suture-operations upon the larger blood-vessels. H. SCHMITZ (Deut. Zeitschr. f. Chir., 1903, B. 66, H. 3 and 4) offers the following conclusions concerning the various processes of repairing damage to arteries, namely, the use of buttons, of continuous sutures of silk and catgut, of retention sutures, and of similar methods. In a few important points, attempts made at suture of arteries in man have agreed with numerous experiments made upon animals. These points are the following: (1) Aseptic wound is absolutely essential; (2) smooth, clean margins of the wound, which may be separated readily, without very much tension; (3) the vessels to be sutured should not be too small. In man the popliteal artery and the brachial artery are examples of vessels of suitable size; (4) the arteries should be carefully exposed, and not over too extensive an area; (5) under these conditions ordinary suture may succeed, either in longitudinal, transverse or flap wounds, without much laceration of the vessel, and also oblique wounds. Any wound must not involve more than half the circumference of the vessel. There is less unity of opinion as to the best material for the suture, but there is agreement that the needle and its thread may be as fine as possible. Sutures with cat-

gut have not been very successful, and kangaroo tendon has similarly failed, because both are too coarse, and cause encroachment upon the lumen and secondary thrombosis. This happened in animals, but in man four such operations have succeeded. In animals the greatest success has been had with silk. Other objections to catgut are that it is not of so uniform a diameter as silk, and cannot be so accurately and securely tied into knots, and is furthermore very much more difficult of sterilization.

OBSTETRICS AND GYNECOLOGY.

Elephantiasis Congenita Cystica.—Antenatal pathology presents no monster which, while preserving some semblance to human form, deviates therefrom in stranger and more striking manner than the condition above mentioned, remarks J. B. HELLIER (Brit. Jour. of Obstet., Feb., 1903). The malformation depends upon three conditions: (1) Certain defect of the skeleton. These, however, are not the essential thing. It is not, as in spina bifida, where the osseous defect causes the meningomyelocele. The distorted contours depend upon disease of the soft parts; (2) the general anasarca of the body; (3) the characteristic lesions consist of the formation of extensive irregular cystic cavities in the subcutaneous tissue. After reporting in detail two such cases, the author summarizes as follows: The first monster may be described as an acardiac fetus—a parasitic twin. It was affected with hydrocephalus and cystic elephantiasis and general dropsy. It had developmental defects in anterior thoracic wall and in extremities, with great defects in internal organs; heart, lungs, liver and spleen being absent; kidneys rudimentary, and alimentary canal imperfectly developed. The second had also cystic elephantiasis, absent upper extremities and rudimentary development of face and skull. History wanting.

Fundal Fibroid Polyp and Inversion of the Uterus.—A most interesting case of this variety is reported by H. BRIGGS (Brit. Jour. of Obstet. and Gyn., Feb., 1903). Mrs. P., widow, sixty-three years of age, physically a robust woman; first consulted her physician in the earlier part of Jan., 1902, because of her greatly reduced weight, continual hemorrhage and occasional pains. For two years she had been aware of a lump protruding from her vagina, also of a fetid discharge. For twenty years there had been hemorrhage, and once, seven years ago, the hemorrhage had been severe. On examination, Feb. 27, 1902, the uterus was found to be completely inverted, and in numerous small patches softly adherent to the walls of the vagina. The polyp, partially protruding at the vulva, resembled in shape a small door knob; it was centrally attached by a short pedicle to the inverted uterine fundus. The boss of the polyp measured two inches and the pedicle three-quarter inch in diameter, the former presented an irregular, sloughy surface. The patient had had twelve children and two miscarriages, and had not consulted a doctor during the twenty years of hemorrhage. The progress and duration of the inversion were unknown. On March 4, 1902, the uterus was removed. The only hemorrhage worthy of note, and that was moderately free, occurred during the handling of the inverted uterus and polyp. Within the inverted cup of the uterus only the innermost portions of the broad ligament remained. The other organs, which were normal, and above the operation wound, were left.

Post-Mortem Parturition.—A number of cases have been collected by L. HIRSCOVEN (Jour. de Méd. de Bordeaux, Feb. 22, 1903) from the literature of this subject, in which the birth of a child occurred after the death of the mother; in some instances, as much

as two or three days having elapsed. Various explanations of the phenomenon have been offered, of which the author quotes that of Bichat, that all the organs do not die simultaneously; and that uterine contractions may take place after the heart has ceased to beat. Leroux has noted uterine contractions a quarter of an hour after the cessation of respiration. Brown-Squard believes posthumous contractility to be due to contact of non-oxygenated blood with the muscular fibers. It has been observed that post-mortem births occur only in those eight or nine months pregnant; the parts being then sufficiently prepared for parturition to render posthumous contractions effectual. In cases of birth some time after the mother's death, the consensus of opinion seems to be that they are attributable to compression from the gases engendered by cadaveric putrefaction.

The Relation between Uterine and Gastric Diseases.—In pursuing investigations whose aim has been the discovery of the reflex centers and pathways of the nerve plexuses of the female genitalia, TUSZKAI OÖN (Am. Jour. of Obstet., March, 1903), has had his attention directed to the close anatomical connection between the nerve paths of the uterus and the stomach. Cases treated for gastritis and neurosis of the stomach showed no improvement, and on genital examination, showed deviation of the uterus in either the sagittal or horizontal direction or chronic inflammation of the organ. The cure of these uterine troubles was followed by a striking improvement or an entire cure of, the gastric symptoms. The writer summarizes his studies as follows: (1) Uterine and gastric troubles may be in close reciprocal relation; (2) in making a diagnosis of reciprocal action, merely coincident affections of these organs must be excluded; (3) the first medium of reciprocal action is the nerve path, the center of which for the genital must be sought, not in the brain or spinal cord, but in the sympathetic system. The ventral center of this is the solar ganglion, by means of which the uterus, through the inferior hyper-gastric plexus, is brought into reflex association with the anterior and posterior gastric plexuses. The reflex paths are called spermatic, pseudohemorrhoidal, cutaneo-cavernous, uteroceciac, and uterospinal anastomosis. The more direct reflex paths are direct connections of the vagus with the sympathetic system, without entering the solar plexuses, especially with the uterovaginal plexuses and with the para-uterine ganglia, which are connected with this (genitocrural anastomosis). (4) The other mode of origin of reciprocal action must be sought in changes in the common statical relations of both organs. (5) Dislocations of the stomach cause uterine displacement through reciprocal action of the static mechanical forces (secondary uterine trouble), whereas primary displacements of the uterus produce secondary genitoneurosis or actual disease, the reciprocal action of these cases being brought about through nerve reflexes. (6) The blood path plays a rôle of only tertiary rank in regard to this reciprocal action.

Celiotomy during Pregnancy.—When formerly a surgeon made a mistake in his diagnosis on opening the abdomen and found pregnancy, he quickly closed it and let the case alone, even if some growth or some pathological condition existed, says J. M. CARSTENS (Am. Jour. of Obstet., March, 1903). To-day we know that operations can be just as safely done as if no pregnancy existed. Tumors are removed that will interfere with delivery, and other acute conditions, such as appendicitis or injury to the bowels, in spite of existing pregnancy, are operated upon most promptly. The author has operated in the case of existing pregnancy twenty-one times with five deaths, so that the

mortality was over 23 per cent. The writer believes that the mortality is less in the more modern cases. These twenty-one cases were as follows: Appendectomies, 5; fibroids, 4; hernia, 1; abdominal hysterectomy, 1; ovariotomy, 3; vaginal hysterectomy, 3; miscellaneous, 4. Tumors above the brim of the pelvis, or which can be moved above the brim of the pelvis, need not be interfered with; still, all tumors take on rapid growth during pregnancy, and the increase in size may interfere with the functions of life and then require surgical interference.

The Treatment of Placenta Previa.—The management of placenta previa is a very serious business. In obstetrical practice nothing is more so, not excepting that of puerperal convulsions, which are now well understood in their pathology and treatment. Very properly may it be said, remarks C. D. PALMER (Am. Jour. of Obstet., March, 1903), that there is no fixed treatment applicable to all cases of placenta previa, at all times and under all circumstances. Treatment needs to be prompt and well directed, actuated, of course, by intelligence, skill and courage. There is no safety to the mother until the delivery has been completed, by means artificial or natural; complete safety is not assured even after the event has taken place. Two chief dangers to the mother are loss of blood and sepsis. To the child the risks are greater. When the attack comes on the patient should be put in the recumbent position, as hemorrhage may be provoked by bodily exercise, coughing, lifting, or sexual intercourse. If labor pains have begun, the firm application of a clean abdominal bandage will stimulate further these contractions and aid to press the presenting portion of the fetus more thoroughly against the dilating cervical canal and lower segment of the now bleeding uterine wall. The vaginal tampon need not be employed, unless the hemorrhage continues or repeats itself, provided always the physician's services are near at hand. Abnormal presentations are relatively more common in cases of placenta previa, because then labor is so often premature, or because the present placenta mechanically displaces what otherwise would be a normal presentation. The author has little confidence in the use of rubber dilators (Barnes' or Charpentier's) either to induce labor or to dilate the cervical canal, but rather depends upon the larger metal dilator and the tampon or the fingers. It is rare that conditions are such as to justify Cesarean section in a case of placenta previa. Any complete separation of the placenta—Simpson's method—will arrest the hemorrhage. This method usually ignores the life of the child. Certainly then, it ought, for the most part, be used only when the child is dead or is not viable, or when greater exhaustion of the mother contraindicates delivery by version. Ergot has a limited use in this disease, more for the purpose of stimulating contractions after dilation has occurred, never before, if version is reasonably entertained; but it should always be given postpartum in this disease, and the recumbent posture should be prolonged for several days longer than in a normal case. Sepsis is to be avoided by care in the handling of the parts that they may not be bruised or torn, and, above all, observe the strictest aseptic and antiseptic precautions. Undue loss of blood invariably augments the susceptibility to, and liability of dangers of, septic absorption.

Rupture of the Uterus during Labor.—This accident is not as rare as is generally believed. The statistics given in text-books are unreliable. In 4,420 consecutive labor cases, in the service of the Chicago Lying-in-Hospital Dispensary, there have only been two deaths and these were due to rupture of the uterus during labor. JOSEPH B. DE LEE (Am. Jour. of Obstet.,

March, 1903) has only seen nine cases of rupture of the uterus sub partu, and one other occurred in his service during his absence. In considering ruptures of the uterus a sharp line must be drawn between complete and incomplete, the latter being tears that extend to, but not through the peritoneum. The prognosis in incomplete tears is quite good, most of the women recovering; while with complete rupture the majority of the patients die, whatever be the mode of treatment. The most successful method of treatment with incomplete rupture is the tamponade of the rent. Gauze is lightly packed into the cavity under the peritoneum, taking extreme care not to injure this delicate covering. If hemorrhage is profuse the gauze packing will probably not stop it, even if strong counter pressure from the abdomen is made. It is usually impossible to control the hemorrhage from below, and in these cases the abdomen must be opened and the broad ligament and the vessels clamped from above. In the treatment of complete ruptures there are six methods to choose from, viz., (1) Delivery of the child from below, and expectancy, ice-bag on the abdomen, ergot, opium—*i.e.*, symptomatic treatment; (2) delivery of the child from below, tamponade of the rent and the uterus; then same as No. 1. (3) Delivery of the child from below, sewing up of the rent as far as possible, and tamponade of the remainder. (4) Vaginal delivery, followed by extirpation of the uterus from below. (5) Laparotomy, removal of the child and placenta, suture of the uterus. (6) Laparotomy; removal of the child, etc., partial or complete extirpation of the uterus. The first four methods presuppose the possibility of delivery of the child from below. This is not always possible, or it may be inadvisable because of the possibility of the danger of enlarging the uterine lacerations. In hemorrhage that cannot be controlled from below, and in contracted pelvis, the laparotomy may become a necessity. If there be any question of sepsis the whole uterus should be removed, the peritoneum closed, and the subperitoneal space drained from below. It is a question if the peritoneal cavity should be drained. Of the four methods of treatment in which the child is delivered from below, that offering the best results is the partial drain and suturing of the peritoneal cavity and the site of the rupture. Even in septic cases simple drainage offers much hope, but here the vaginal extirpation is coming into vogue, and when the hemorrhage is slight the latter operation may be practised.

Conservative Surgery of the Tubes and Ovaries.—In a long, searching and critical review of the various theories on this subject, and the best advocated operations to be employed in operating, FLORENCE N. BOYD (Brit. Jour. of Obstet., March, 1903) finds that the consensus of opinion from the indications given by the operators of the widest experience, that conservative operations on the tube and ovaries may be practised: (1) For new growths of benign character, for myoma and fibroma of the tube, simple cysts, dermoids and fibroids of the ovary and parovario cysts; (2) the tube and ovary ought not to be sacrificed as a matter of convenience to the operator). It is contraindicated in malignant or in papillary disease; (3) for chronic oophoritis and cystic degeneration; (4) for hematoma of the ovary and tube (perhaps hardly a consensus of opinion here); (5) for inflammatory diseases of the appendages, where the acute stage has subsided, provided that there is no suppuration in the pelvis or in the ovary, that the contents of the tube are serous or hemorrhagic, and prove sterile on immediate overslip bacteriological examination (Schauta, Wertheim), and that the inner end of the tube is patent. For conservation to be rational it is essential that part of the ovary should be capable

of function; if both ovaries have to be entirely removed, there is no reason for retaining the tubes; the state of the ovaries must govern the method of procedure; (6) conservative operations on the tubes should be limited to the child-bearing period. Up to the present it is uncertain whether an ovary, the seat of a small cystoma, may be safely resected or whether a tube, dilated by old sterile pus can be safely opened up. Some of the American surgeons show special boldness in the presence of pus. With regard to the tubes, the majority of conservative operations are undertaken when the abdomen has been opened for gross disease of the appendages upon one side; and less advanced tubal disease has been revealed. In considering the method to be adopted in dealing with the tubes, certain points stand out: the artificial ostium should be wide enough to allow of later contraction, if necessary, by slitting the tube longitudinally. Provision should be made for eversion of the mucosa in order to obtain as far as possible the conditions present in the normal ostium abdominale. Care should be taken, by suture or otherwise, to leave the new opening in the tube in juxtaposition with the ovary. The energetic disinfection of the tubes by antiseptics practised earlier, is unnecessary if the cases are suitably chosen, and all measures likely to irritate the peritoneum are to be avoided. It is still undecided whether resection or igni puncture of the ovary is the best operation for chronic oophoritis and cystic disease. That resection may be followed by adhesion in some cases has been proven by observation. We are not yet in a position to determine how far the technic adopted (*i.e.*, the kind of suture used and the method suture) is responsible for such adhesions.

The Nature of Hydrosalpinx.—In a résumé of the clinical aspects of twenty cases of this variety the following ideas are advanced by CLEMENT WHITE (Brit. Jour. of Obstet., March, 1903): In nine instances the old view that hydrosalpinx is a stage of salpingitis cannot be disproved, for the condition followed extrauterine pregnancy of gonorrhea. In eight of these the balance of evidence was in favor of the closure of the ostium of a healthy tube by the peritoneum in the way suggested by Dr. Cullingworth. Ten of the cases were in the writer's opinion, a retention cyst, a tumor sui generis, independent of neighboring organs and due to faulty development. In one case the condition seemed to be due to peritonitic closure of the tube following extra-uterine gestation. Uncomplicated cases of hydrosalpinx are rare. Some definitely are symptomless until some accident intervene, such as sudden enlargement of the tumors, or pelvic peritonitis, or growth of another tumor. Pain in the hypogastrium and vagina are by far the most prominent symptoms. There is some pain at the end of menstruation. Dyspareunia and dyschezia are fairly common, as is congestive dysmenorrhea. Menorrhagia is exceptional, irregularity of menstruation is exceptional. Menstruation is scanty in cases of hydrosalpinx; in fact, in one case, where there were frequent attacks of pelvic inflammation, is almost the only marked exception to this rule. This single point would make one chary of accepting the view that hydrosalpinx is merely a stage of salpingitis. Irregular and excessive menstruation is one of the most common and constant symptoms of salpingitis. That hydrosalpinx is a retention cyst, most authors agree. That some cases are little more than a catarrhal salpingitis with an excessive amount of fluid retained, the author is disposed to admit. That some are due to an edematous condition in the final stages of kidney disease is also probable. That some are due to peritonitic closure of a healthy tube seems also to be true. But many of the cases where the ostium is such as is commonly described as due to

salpingitic closure of the tube, are cases of impervious ostia due to faulty development. It is in this class of case that Mr. Bland-Sutton has pointed out that a small pedunculated cyst is often present, whether due to a hydatid of Morgagni, or Kobelt's tube he does not know. At least the author would insist that the clinical history in too large a proportion of his cases to be negligible is not the history of a salpingitis, is often marked by an absence of symptoms, and the symptoms which are present are such as are found in cases of mal-development, namely, sterility, pain, scanty menses, dysmenorrhea, dyspareunia.

Deciduoma Malignum after Menopause.—In the light of the interest that this subject is giving obstetricians and gynecologists, a most unique case is added to the literature by FRED J. MACCANN (Brit. Jour. of Obstet., March, 1903). A woman aged fifty-three years was admitted to the Samaritan Hospital on March 21, 1902. She had had ten children. Her last pregnancy, nine years previously, terminated at the third month. Eighteen months before her admission to the hospital she had ceased to menstruate and no blood had been noticed until October, 1901, when a sudden gush of blood came from the vagina, followed by a continuance of the flow for a day. The free hemorrhage continued every four or five days until three weeks before her admission, when only a brown discharge was noticed. The severity of the hemorrhage necessitated her confinement to bed during its progress. There was no pelvic pain, but there had been loss of weight. Manual examination of the uterus showed it to be enlarged, about the size of a three months' pregnancy. A small fleshy polyp was growing from the external os uteri. Slight uterine hemorrhage followed the examination. March 26, 1902, vaginal hysterectomy was performed. The patient rallied from the operation but died six days later from suppression of urine. The urine contained two-thirds albumin. Post-mortem examination and the microscopical examination of the uterus and the adnexa showed the tumor to be a deciduoma without involvement of the ovaries or tubes, there were no metastases.

A Case of Vascular Mole.—An interesting case of this variety is reported by MARY SCARLIER (Brit. Jour. of Obstet., March, 1903). After giving the clinical history of the case the author finds that the most interesting points were: (1) The difficulty of diagnosis due to the great and persistent hardness of the uterus; (2) the association of bilateral cystoma with the pregnancy; (3) the reminder given of the possible association of vesicular mole with subsequent malignant disease of the placental site; (4) but unfortunately nothing definitely was proven by the case as the uterus was removed soon after parturition.

A Coccygeal Tumor which Interfered with Labor.—Congenital tumors of the coccygeal region are of special interest because of their comparative rarity, their enormous variety of structure, and their doubtful source of origin. In view of these facts, JNO. T. HEWERTON (Brit. Jour. of Obstet., March, 1903) reports a case of coccygeal tumor which gave difficulty during labor and discusses the various varieties of tumors that are to be found in this region. The so-called carcinomata and cystic sarcomata are terms given to tumors which are histologically benign, and manifest clinically no malignant characters whatever. Congenital tumors of this region may, broadly speaking, be divided into two classes—cystic and solid. Of the cystic group the following are representatives: Spina bifida dermoids, including sequestration dermoids and thyrodermoids, or congenital adenomata, simple cysts unconnected with spinal canal, hygromata and the so-called hydatid cysts. In the solid group may be placed superfetation, lipo-

mata, myxomata, fibromata, of the dura mater, true sarcomata and hernia. The variety which the author reports is of the adenomatous order. The interior of its capsule was continuous with the spinal canal. The seat of origin of adenomatous tumors has been the subject of considerable speculation and enterprise. The neurenteric canal, the coccygeal gland, and the sebaceous and sweat glands of the skin are the chief sources of origin to which these complex tumors have been attributed. On November 10, 1901, the author was asked to see a case of a woman, aged thirty years, in her third labor. The first two had been normal, the last was nine years ago. In the latter months of the present pregnancy the abdomen had been unusually large, and there had been a white tense swelling of the legs. Labor had begun at midnight and the progress was delayed by the presence of a pelvic tumor. Two medical men had been trying to deliver her and had easily brought down one leg in front of the tumor. After much difficulty the second leg was brought down by a good pull, in the course of which one foot was broken away. Attempts to push up the tumor, while traction was made on the legs, failed. The tumor was found to be connected with the fetus and the whole mass was delivered with the fetus. The placenta was expressed after ten minutes without any difficulty, and was followed by a slight hemorrhage. The tumor was a large rounded mass occupying the lower end of a large female fetus. Apart from the coccygeal tumor, no other pathological abnormality could be discovered. The tumor was apparently solid and somewhat lobulated. It was freely movable and was attached by a broad pedicle, which sprang from the ano-coccygeal region. By digital examination by the rectum, it was possible to reach the upper limit of the tumor, which fell a little short of the sacral promontory. No postanal pouch, or loss of continuity in the rectal wall could be discovered. There can be little doubt that this specimen is one of those congenital adenomata that arise either in connection with the neurenteric canal of the embryo or from the coccygeal gland. Taking the whole of the facts into consideration, and especially remembering that the spinal canal was continuous with the interior of the growth, the balance of evidence seems to be in favor of the tumor in the present case being neurenteric in origin. This would conform with Mr. Bland-Sutton's view that all such "thyrodermoids" are in front of the coccyx, behind the rectum, and subjacent to the levator ani muscle.

Influence of Maternal Nervous Lesions on the Vitality of the Fetus.—This question has been studied by L. BUTTE (Jour. de Méd. de Paris, Feb. 22 and Mar. 1, 1903) through the production in pregnant rabbits of sciatic neuritis and meningomyelitis; the outcome of the experiments being that neither of these conditions, produced in rabbits a certain time before term, caused the death of the fetus before that of the mother; the latter having been killed a short time before term in order to ascertain the condition of the fetus.

Larvated Malaria Simulating Threatened Abortion.—The most unexpected and peculiar symptoms may appear in malaria, and for this reason, in malarial countries, when symptoms are not clearly defined, that disease should be taken into account, writes GRANOZZI-ANTINORI (Gazz. Sic. di Med. e Chir., March 1, 1903), who reports the case of a woman six months pregnant who developed uterine pain which, at first slight and transitory, increased in severity and so closely simulated the pains of uterine contractions as to suggest threatened abortion. Vaginal exploration was not possible, but absence of the slightest hemorrhage led to the belief that the symptom was not directly attributable to the

uterus. Other measures failing to relieve, recourse was had to quinine, in the belief that the discomfort experienced might be due to uterine neuralgia of malarial origin. Immediate amelioration followed administration of minute doses of that drug, but upon its suspension the pains returned in full force. Encouraged by the previous improvement effected, and absence of any untoward effects from the use of the drug, the author administered a gram of quinine daily without opium or morphine, with the result that the patient's pain ceased entirely, her general condition improved, and at nine months she gave birth to a perfectly healthy child.

NEUROLOGY AND PSYCHIATRY.

Changes in Peripheral Nerves Produced by Toxic Substances.—To determine, if possible, whether toxic substances could penetrate the integument in sufficient quantities to produce degenerative changes in the peripheral nerves without destroying the convexity of the superficial tissues, a series of animal experiments are reported by D. J. McCARTHY (Univ. of Pa. Med. Bull., March, 1903). The investigation was instigated by the case of a man who after immersion of the arms in a secret preparation (necessary in his occupation and probably containing hydrofluoric acid), developed an acutely swollen, anesthetic condition of the hands, followed by paralysis and atrophy, progressive over a course of two years. The medicolegal aspects of the case are interesting. The animal experiments consisted of the application of various poisons to the skin of the extremities of rabbits and noting the effects on the skin and peripheral nerves. The local application of formalin (40-per-cent. solution) produced an intense and extensive degeneration, the result of an acute inflammatory process, but without destroying the continuity of or seriously interfering with the structure of the superficial tissues. Hydrofluoric acid does not differ from other corrosive poisons when locally applied. In weak solutions it may cause degenerative changes in the deep nerves, with minor necrotic lesions in the subcutaneous tissues without destroying the continuity of the integument. The effect of strong carbolic solutions is mainly on the superficial tissues, and it is only when these are extensively involved that the deeper nerves become degenerated. Acetate of lead produces changes less intense than the latter without involvement of the subcutaneous tissues or nerves. It seems quite probable, therefore, that certain poisons may penetrate the superficial tissues and cause inflammatory and degenerative changes in the deeper trunks without destructive lesions of the overlying tissues.

Trunecik's Serum.—The combination of inorganic salts suggested a few years ago for relieving the general symptoms caused by arteriosclerosis and used with success by several observers, led A. GORDON (Phil. Med. Jour., March 21, 1903) to employ the method to disturbed cerebral functions caused by circulatory changes of any origin. The internal treatment according to the modified formula given by Leopold-Levi was used in twelve cases, including arteriosclerosis, purely cardiac lesions and anemia. Of nine successful cases, the majority showed considerable improvement. In cases free from arteriosclerosis, there is probably a change in the physical or chemical properties of the blood, or in the blood-pressure. The author concludes that when iodides, nitrates, and other means used in such cases fail, the serum should be given a trial and sometimes a combination of both may be necessary. Several days or a week must elapse before a desirable result can be expected.

Treatment of Neurasthenia.—Attention is called to the value of respiratory exercises in the treatment

of this and allied nervous conditions by J. W. McCONNELL (Univ. of Pa. Med. Bull., March, 1903). He reports success in neurasthenia, Sydenham's chorea, habit chorea, hysterical tremors and hysteria. Partial success was obtained in palsies of cerebral origin and in hysterical tremors. Failures were recorded in almost every disease for which the exercises were tried, but organic diseases of the cord and paralysis agitans were treated with appreciable improvement. Overexertion must be carefully guarded against and the regaining of voluntary control is the fundamental principle of respiratory exercises as a remedial agent. The rhythm of the breathing should be frequently changed and only simple physical exercise combined with the respiratory apparatus should be limited to pulleys or dumb-bells.

Abnormal Constituents of the Urine after Epileptic Seizures.—The results of the researches of Voisin on this subject are quoted by K. INOUYE and T. SAIKI (Hoppe Seyler's Zeitsch. f. Physiol. Chemie) as follows: Postparoxysmal albuminuria is observed in one-half of the cases, and in all forms of epilepsy. The status epilepticus appears to be always accompanied by albuminuria. This condition is constant in the same individual but it is quite variable as regards quantity. It arises in the first two hours following the epileptic attack and seems to be closely related to the congestion of the face. The authors, in agreement with the latest investigators, have only seldom found albuminuria following epileptic attacks. When it did appear it was trifling and evidently due to metabolic disturbances of the renal cells from oxygen privation. They also found no postepileptic glycosuria. The authors isolated from postepileptic urines an acid, which is not present in the urine in the intervals between the attacks. They are certain that this acid is identical with dextrorotatory lactic acid, and that the severe epileptic seizure causes an increased production of dextrorotatory lactic acid. The investigation of the proximate causes of the appearance of this substance in the urine brings to light certain interesting facts. The extirpation of the liver in certain animals causes a distinct diminution in the amount of uric acid excreted; the nitrogen of the urine appearing mostly under the form of ammonium lactate. Under this condition also lactic acid has been found in the urine of dogs. Apparently lactic acid is one of the antecedents of uric acid, for, according to Wiener, the sarcocolactic acid resulting from the metabolism of the tissues undergoes oxidation with the formation of tartaric acid, which uniting with another metabolic product, urea, produces diuretic acid; this substance together with another molecule of urea, forms uric acid. The disturbance of liver extirpation would include not only a failure of the synthesis of lactic acid, but also an absence of the oxidation of this substance into tartaric acid. The absence of the hepatic function results not only in the appearance of lactic acid in the urine, but also in diminution in the quantity of urea and uric acid secreted. The above facts would support the hypothesis that the appearance of dextrorotatory lactic acid in the urine of epileptics, is to be attributed to some disturbance of the functions of the liver produced by the epileptic seizures. If this hypothesis be correct, then one would expect that the appearance of lactic acid would go hand in hand with the diminution of urea and uric acid, which is not the case. The authors entertain no doubt that the formation of lactic acid after epileptic attacks is to be attributed to some other cause than the disturbance of the hepatic function. This cause might be found in the convulsions and the associated severe dyspnea. The investigations of Werther and Marcuse have shown that the convulsions produced by strychnine increase the production of sarcocolactic acid. This increase is directly due to the oxygen starvation resulting from the convulsions.

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TYPHOID FEVER IN INFANTS.

TYPHOID FEVER has, until very recent years, been considered to be an extremely rare disease in children under two years of age, and even most of the text-books on children's diseases have stated that as a rule, when continued fever of obscure causation existed in very young children, typhoid might always be excluded at once, because of the age of the child. As is very evident, from the discussion at the meeting of the New York Academy of Medicine, March 19 (see Society Proceedings in this week's News, p. 711) doubts have been growing with regard to this position during the last ten years. The infrequency of typhoid fever in children was, in former times, considered to be due to the existence of a quasi-immunity to the disease in very early years. Now it is very generally recognized that whatever protection very young children have is due not to any natural immunity, but to the methods of feeding infants which usually preclude the possibility, or lessen very much the danger of typhoid infection. Breast-fed infants have practically no opportunity to become infected. More than this, it seems not unlikely, as was pointed out by Ehrlich, some years ago, as the result of his experiments upon animals, that

mother's milk frequently contains immunizing principles that provide a certain amount of protection to nursing offspring, for diseases the mother has had. The custom of sterilizing infant's food much more carefully than that for adults has also served to guard young children from typhoid infection, until they begin to share family meals and associate freely with members of their own household and children from neighboring families.

Unfortunately opportunities for observation furnished by the extremely bad sanitary conditions of certain of our large cities in this country have demonstrated that even these protective factors are not sufficient to guard young children completely from the dangers of contracting typhoid fever. In Philadelphia a number of cases of the disease have been seen even in nursing infants and there is a consensus of opinion among those who have most experience that typhoid fever is not at all infrequent under the age of two and one-half years. In Chicago, too, some cases of the disease have been seen in the first years of life. Where there are frequent opportunities for infection there is always good reason to suspect continued fever in young children of being typhoid. Our experience in New York has fortunately been such as not to make the application of this diagnostic rule very frequently necessary, but it must not be forgotten that in families where typhoid fever already exists any member of the household, no matter how young, may contract it.

The affections that simulate typhoid fever and that undoubtedly have sometimes been reported as typhoid are obscure pneumonia, especially of the central variety, certain forms of nephritis, usually low grade in character and in the terminal stage and some insidious varieties of colitis in which diarrhea and abdominal tenderness are prominent features. Unless there is definite exclusion of these conditions, typhoid fever can hardly be justifiably diagnosed here in New York. The disease is probably not so infrequent as the very fortunate experience of the New York Foundling Asylum would seem to indicate. The reason for this appears to be that in the absence of distinct epidemics of typhoid fever here in New York, there seldom have been a number of cases of the disease in the same household, thus exposing infants as much as in other cities, and if occasionally there were several cases, foundlings have been doubtless preserved from the disease by removal. Much as we have to complain

of our water supply, at least it has not sown typhoid broadcast.

All the authorities are agreed that the clinical course of typhoid in children is quite different from that in adults. Goodwillie's steplike rise of temperature, so characteristic of incipient typhoid in later life, is practically always lacking in children, and there is apt to be an abrupt initiation of symptoms. All are agreed, moreover, that the affection, in the very young particularly, is characterized by nervous rather than intestinal symptoms. At the beginning the disease often simulates meningitis very closely, and during the course of the disease the meningeal symptoms are prominent. Epistaxis is rarer than in adults and the disease does not begin so frequently with diarrhea as might be expected from the experience with adults and the ease with which children's peristalsis is usually interfered with and the frequency of diarrhea for slight causes. The skin eruption in children is likely to be much more extensive than in later years. A number of anomalous eruptions have been reported as occurring in incipient typhoid fever in children, but it is probable that these are not always due to the typhoid fever alone. In recent years the use of coal-tar products in febrile conditions and the well-known susceptibility of children to these drugs gives rise to the suspicion that many of the peculiar cutaneous lesions reported were really due to the administration of synthetic antipyretics. Subcutaneous hemorrhages sometimes occur in children and, if extensive, indicate a very bad prognosis. Slight petechial spots, however, must not be considered to have serious significance.

It can readily be understood that typhoid fever in children is not easy of diagnosis by the ordinary clinical criteria. The only absolutely pathognomonic sign is the occurrence of the Widal reaction. The bacteriological examination of the stools, when positive, gives very definite and valuable information. As the Widal reaction may not occur until as late as the twenty-eighth day, the test must be made every day during the continuance of the fever. No number of negative Widal reactions excludes typhoid fever absolutely in a case of continued fever until convalescence is practically complete. In the meantime it must not be forgotten that the stools and the urine may contain typhoid bacilli in large quantities and may consequently prove a source of active contagion. Even with the assistance of the Widal reaction typhoid fever in children re-

mains one of the most difficult diagnostic problems with which the modern pediatrician has to deal. Careful investigation is needed in order to decide just how frequent the disease is and whether there may not be a definite clinical course that will make the affection more readily recognizable in children than is the case at present.

INCREASE OF RABIES AND ITS PREVENTION.

DURING the first three months of the present year, four mad dogs have been reported as running amuck in Greater New York and its environments. A number of persons have been bitten and especially a number of children have had to undergo treatment prophylactic for hydrophobia. The last one of these mad dogs reported is said to have bitten some ten children and, needless to say, caused a number of serious frights with consequent emotional disturbances and neurotic tendencies of various kinds. It seems very evident then that special measures are needed in and around New York, or the stringent enforcement of protective regulations already existent, in order to secure reasonable immunity from these frequent unfortunate occurrences. The dates of the development of the rabies in the successive animals would seem to show that there is a series of such accidents likely to occur in the near future, since each succeeding mad dog announced has come about at the end of the ordinary incubation period for rabies and would seem to have been affected from the bite of the preceding animal victim.

It is absurd to say that such dogs are not suffering from true rabies and that the public is more scared than hurt. The daily newspapers may add to the sensational details of these occurrences, but there is no doubt of the real danger involved. Not long ago the eight-year-old child of a prominent physician of New York City died as the result of the bite of one of these mad dogs. There are, it seems, even some physicians who still consider that rabies in human beings is more of an imaginary than a real ailment. In this case, however, the patient was seen by specialists of the best reputation and there could be no possible doubt that the affection was true rabies. The reported mad dogs have been genuine cases of rabies and the amount of danger involved is so great that even the most yellow journal could scarcely exaggerate it. It is not that hydrophobia is increasing, but it is that special opportunities for infection have been provided, and unless measures are

taken to lessen these, the disease will continue to be more and more of a menace to human life.

In Germany, where the regulations with regard to the licensing, care and muzzling of dogs are enforced much more strictly than here in America, hydrophobia is not common and the Pasteur Institute established in Berlin some three years ago was founded with the idea rather of treating such recognized cases of the disease as occurred along the Russian border, where rabies is not uncommon. Rabies has infected the wolves and certain other animals in Russia and is constantly communicated to domestic animals with the result that it spreads to human beings. Otherwise, however, Germany furnishes an excellent example of how much may be accomplished by proper prophylactic precautions in the prevention of rabies in human beings. In England, where the Anglo-Saxon theory of the liberty of the individual has been pushed so far as to make the vaccination laws quite ineffectual, there is still enough popular sense left to insist on the maintenance of a proper attitude with regard to the liberty allowed animals and the country consequently suffers very little from hydrophobia.

Anyone who has seen the suffering of one human being afflicted with this fatal disease, especially when the patient is a child, will readily concede that no amount of inconvenience caused animals by muzzling or other protective arrangements can ever be considered too much to prevent such suffering. There is no doubt that neglect has allowed the accumulation of ownerless dogs in this country to an extent that renders our large cities frequently liable to incursions of rabid animals.

There is need of a thorough awakening to the danger. Surely the Board of Health can draft new regulations, or insist on the enforcement of present laws, so as to secure immunity from the evil. If we were once rid of rabies, it is probable that the disease would never again become a menace.

ACCIDENTS IN FOOTBALL.

A VERY general opinion, fostered by the public press and our maiden aunts, is that football is a brutal, boorish game, that tends to decapitate or disembowel the flower of our university youths, and that it is a good thing there are only eleven men on a team, or there would not be members enough to go around after Thanksgiving Day. It is faintly hoped and even suggested that when the college presidents have eased their minds on

the matter of endowments, they will bend them to suppressing football.

May the day be far off! Let statistics come to the fore and show for the comfort of parents with sons, and for the support of the grand old game, that football does not kill and maim anything like the number of students that are popularly supposed to be injured by it.

Professor E. G. Dexter, of the University of Illinois, has published an exhaustive study on accidents from college football in the April number of the *Educational Review*. A questionnaire brought replies from a great number of the large and small colleges of the country, concerning the number of students controlled, the number playing football, and how many were either killed, seriously injured, or permanently disabled.

He found that about one college man in ten the country over plays football, the proportion being larger in the smaller colleges, and of these about one in thirty-five is injured each season sufficiently to necessitate loss of college duties. But of these the number who are permanently injured or die from the effects of the game is so small as to be practically a negligible quantity. Of recorded deaths he found only three in 22,766.

The general feeling of the college presidents and of the athletic instructors appears from their expressed opinions to be in favor of football, and to lay little or no stress on broken bones.

Sentiment aside, we find from accident insurance statistics that football is a much less dangerous sport than many others.

ECHOES AND NEWS.

NEW YORK.

Appointment of Dr. Pedersen.—Dr. Victor Cox Pedersen has been recently appointed anesthetist to the Roosevelt Hospital, First Surgical Division, and also assistant anesthetist to the New York Polyclinic Medical School and Hospital.

Columbia Faculty Changes.—Drs. E. L. Dow and John S. Thacher were appointed demonstrator of pathology and clinic lecturer in medicine, respectively. The professorship of ophthalmology made vacant by the resignation of Dr. Herman Knapp was filled by the appointment of his son, Arnold H. Knapp, M.D. The registration of Dr. G. M. Tuttle, professor of gynecology, was accepted, and it was decided not to fill the professorship for the next academic year, Dr. Edwin B. Cragin was assigned in charge of the lecture and clinical work of the department.

Rabies and the Bergh Society.—Dr. H. D. Gill, a veterinary surgeon, had considerable fault to find with the Society for the Prevention of Cruelty to Animals in a paper on "Rabies," which he read last week before the Alumni of Bellevue Medical College (to be published in full in the MEDICAL News). If suitable regulations are not enforced, he said, the disease will surely increase

and the health of the people will be unnecessarily jeopardized. Then he said of the S. P. C. A.: "This private corporation enjoys a yearly revenue of many thousands of dollars from an unconstitutional dog tax, and the only service it has rendered to the people is to catch all unlicensed dogs that these men may happen to run across, throw them all together into a wagon, where they fight and bite until the wagon reaches the pound, when, I am told, the same thing is practised. By their ignorant methods this society may be accessory to the spread of rabies, for a dog may bite others which may be reclaimed later and taken home, where it may develop the disease. It is high time that this very serious dog question should be taken out of the hands of this private corporation, whose only care seems to be to collect license fees, and placed where it properly belongs, that is, under the control of the municipal Board of Health."

Dr. Gulick and Physical Training in Our Schools.—Dr. Luther H. Gulick, recently appointed director of physical training, desires that the borough directors shall relinquish the oversight of the schools of the boroughs and devote themselves to other work. The borough directors of physical training contend that the Board of Education has not provided that Dr. Gulick shall occupy any higher rank than they, and that they are all directors, the only difference between themselves and Dr. Gulick being in the salary. The new director receives \$4,000 a year, the women directors \$2,500, and the borough directors \$3,000 a year. The city charter says that the directors of all special branches shall be under the supervision and direction of the City Superintendent. The borough directors are said to be willing to cooperate with Dr. Gulick, but do not desire to be known as his subordinates. Dr. Gulick says that a plan will be in working order by the time the schools open in September, and that there will then be a uniform course of physical instruction.

New Ordinances.—Mayor Low last week approved the following measures passed by the Board of Aldermen: Authorizing the issue of corporate stock to the amount of \$125,000 for the purpose of providing means for the completion of the new Harlem Hospital, which will be a handsome and commodious annex of Bellevue Hospital. Approving the issue of \$250,000 for the construction of new buildings and additions to buildings under the jurisdiction of the Department of Public Charities. Authorizing the issue of \$90,000 for the construction of an interior public bath in the Borough of Brooklyn. Authorizing the issue of \$75,000 in corporate stock to pay the expenses of preparing the necessary plans and specifications for the construction of a new Bellevue Hospital to take the place of the present old structure.

Treatment of Abnormal Children in Our Schools.—The Board of Superintendents has before it for consideration a report of Associate Superintendent Edward L. Stevens upon the subject of abnormal children in the public schools of the city. Mr. Stevens was appointed by Dr. Maxwell to make the report as a result of the agitation by medical specialists. Now that the Board of Superintendents has decided to consider the question, the hope is indulged in that some definite system for the education of mentally weak and backward children will be forthcoming. "The question of providing special instruction in the elementary schools for pupils classed roughly as defective, backward, or dull children, has been considered for some time, prior to this year, in a more or less desultory fashion," said Dr. Maxwell in his recent report. This year, he says, the problem has been considered more in detail. Experiment stations have been established in six public schools in Manhattan and the results are being studied closely. "It may be found wise," said the City Superintendent, "to place

classes for certain pupils in school buildings and those for other pupils whose condition is more serious in special buildings so situated as to permit the teaching of gardening and similar outdoor occupations. In all cases specially qualified teachers will be required, and in some instances the services of a trained nurse may be found necessary. But, above all, I wish to emphasize the importance of classifying children properly. In many cases I think that diagnosis after careful examination by a medical expert should be required."

It was decided there that the number of so-called defective children exceeds the report made to the Board of Education by the principals of the city some time ago. At that time it was stated that there were 8,000 defective children—that is, children who were behind the normal in the graded classes. It was stated by Miss Alida S. Williams, who has devoted considerable time to the study of the atypical child, that Professor Monroe of Stanford University, who examined 10,000 school children in California, reported 10 per cent. "mentally dull" and 3 per cent. "feeble minded." This mental dullness is oftentimes due to deafness or to defective eyesight, sometimes to adenoids. In other cases it may be due to insufficient nutrition and to sleeping in rooms without ventilation.

Vaccination and Parochial Schools.—Attorney-General Cunneen has decided that Catholic parochial schools are outside the jurisdiction of the State Public Health law, and that neither local nor State health officials can prevent non-vaccinated pupils from attending them. This is a sweeping victory for the Catholic schools, emphasizing their distinction from the public school system and freedom from the public school laws. It settles a long fight between the local and State health officials and the Dunkirk parochial schools. An order having been issued, excluding several hundred non-vaccinated pupils from the public schools, many entered the parochial schools. Father Moselin, head of the parochial schools, refused to comply with the law, threatening to eject any one who attempted to enforce it. An appeal to the State Board and then to Attorney-General Cunneen resulted in his decision to-day.

Dr. Ewald.—Dr. M. I. Knapp, of 136 East Seventy-eighth street, would be pleased to hear from all former pupils of Dr. C. A. Ewald, with the purpose of giving a reception to honor his visit to America. He is expected to arrive May 4.

PHILADELPHIA.

Anti-Spitting League Formed.—As a result of the anti-spitting ordinance passed by Councils a society has been formed under the title of the Anti-Spitting League, the sole object of which will be to begin an active crusade against expectoration on the sidewalks and other public places. The plan and scope of the league have been endorsed by the medical fraternity and by all public-spirited citizens. The idea of the league is to call for a spontaneous enrollment of members. Any one is eligible to active membership by sending 10 cents to the secretary, who will send them an engraved certificate and an emblem which is quite unique, consisting of a foot which is crushing out the life of a snake.

Site Being Cleared for New Jefferson Hospital.—The work of demolishing the old Jefferson Medical College and the adjacent building to make room for the new Jefferson Medical College Hospital, was begun March 31. The old college building was erected in 1828, remodeled in 1838, and again in 1873. The new hospital will be erected in two sections, the first extending from the present hospital to Tenth Street. On its completion the present hospital will be torn down and the remainder of the projected new building erected. The hospital building now in use was erected in 1877.

American Philosophical Society.—At the recent meeting of this Society in Philadelphia twenty new members were elected, five of them being foreign residents. Among the Philadelphians was Dr. Alfred Stengel. Action was taken to provide an adequate celebration in 1906 for the two hundredth anniversary of the birth of Benjamin Franklin, the founder of the organization. Dr. D. C. Gilman spoke of the work of the Carnegie Institution in Washington. The first memoirs accepted for publication are four volumes of astronomical observations by George W. Hill. Among the many papers read at the meeting was one by Dr. M. P. Ravenel regarding the transmission of tuberculosis.

Mayor Ashbridge Congratulated by Philadelphia Hospital Board.—A committee representing the Medical Board of the Philadelphia Hospital presented to Mayor Ashbridge before the close of his term a set of resolutions expressing the Board's appreciation of his work in bringing about improvements at the hospital. Among them were cited: The erection of a Children's Hospital, the erection of the maternity pavilion and of the pavilion for venereal diseases. The beginning of the construction of a pavilion for consumptives, the separation of the insane department from the Almshouse, an end to which the efforts of the Medical Board had hitherto been fruitlessly directed for twenty years, and the greatly increased facilities for clinical teaching through which the institution is advancing into the foremost rank of teaching hospitals, thereby increasing the attractions of the city for medical students and assisting in maintaining its prestige as a medical center.

The Prevention and Cure of Tuberculosis.—In an article written for the *Public Ledger* Dr. S. Solis Cohen, after stating that the establishment of the Phipps Institute in this city is a matter of congratulation for local physicians and the whole community, as are also the other institutions for the treatment of tuberculosis, says "no institution of research, education, or charity, no multiplication of such institutions and no amount of merely scientific work can succeed in stamping out tuberculosis or in bringing the means of its prevention and cure within the reach of all the thousands needing such help. We know, and have known for hundreds of years, how to prevent tuberculosis, and, practically speaking, how to cure it; but the difficulty lay and still lies in the application of that knowledge. This difficulty and its remedy present problems of sociology and economics, not of medicine. . . . The cause of our failures has not been in the old teaching, but in our proneness to depart from the safe path of the old truths, following some will-o'-the-wisp, as, in recent years, Koch's tuberculin, into the bog of error. The greatest of all errors in treatment has been the search for a far-off specific, to the neglect of simple, potent and proved means near at hand." After mentioning the effect of average city surroundings on people accustomed to outdoor life and, on the other hand, of pure air, food, etc., on tuberculous poor from the city, Dr. Cohen says that "for every one saved from tuberculosis in this way, ninety-nine are being made tuberculous by the artificial and unwholesome conditions of our contemporary social organization. Physicians can only point out these conditions, it is for economists and statesmen to determine the remedy. That a remedy can be found, I doubt not. Socialists will tell us that it lies in the adoption of the doctrines of Karl Marx; Single-Tax men will say that Henry George has pointed it out; the professors of economics at our colleges and universities will demonstrate clearly the gross fallacies of Marx, and will cast ridicule upon the teachings of George, but will offer instead nothing more explicit than a shrug of the shoulders. I have here no economic theory to advocate. I would only deprecate the shoulder-shrugging attitude,

and urge the necessity for studying the social situation from the viewpoint of hygiene, and for studying the problems of preventive medicine from the viewpoint of sociology. Even now things can be done by law, others by private benevolence that will help a little—for example, the abolition of child labor; the shortening of the general working day; improvement in civic sanitation; better housing of the poor; prohibition of back to back building; regulation of the height of buildings with proportion to width of streets; increase in the number of small parks and public playgrounds, and similar measures. I do not ignore in this the importance of infection in spreading tuberculosis, but, as I have elsewhere said, it is better to try to prevent conflagration by building incombustible houses than to attempt to banish fire from the service of man."

CHICAGO.

Gift for Children's Hospital.—At a recent meeting of the members of the League of Cook County Clubs, held in the Fine Arts Building, two subscriptions, amounting to \$175,000, had been pledged to the support of the Children's Hospital Society of Chicago. After describing the aims and purposes of the organization recently formed, Dr. Billings said that the permanency and success of the movement is already assured. One individual came to him and offered to donate a large tract of land for a building, or give \$100,000. Another person promised to give \$75,000. He said there are plenty of hospitals in Chicago; there are accommodations for 6,000 persons, but few free beds. The accommodations for children are totally inadequate. All the hospitals are doing good work along individual lines, but far better results might be obtained by co-operation. The purpose of this Society will be to bring these different institutions into a closer relationship.

Chicago's Health.—The bulletin of the Health Department for week ending April 4, 1903, says: For the last half dozen years or more the department has endeavored to push a campaign of education against influenza or the "grip." To the laity it has dwelt on the highly infectious character of the disease and the consequent necessity of isolation of cases, of avoiding all unnecessary contact with its victims, of the importance of disinfecting the discharges from nose, mouth and throat, and of the danger of trying to "fight off" an attack or of self-dosing, instead of seeking competent medical advice and faithfully following it. To the medical profession it has tendered the services of its laboratory and its expert bacteriologists, on the theory that a prompt and certain recognition of the disease is more than half the battle, and that such recognition can only be made by the microscope and culture plate.

A contributory cause of the high mortality of the first four months of the year has been the "freak" weather, as heretofore noted. The "blizzard" of last Friday—with a drop of fifty degrees in twenty-four hours—will show its effects within ten days or a fortnight in an increase of deaths, especially from diseases of the respiratory system and of the kidneys, but with the increase of sunshine which may now be reasonably expected there should be a decline in the prevalence and the virulence of such germ diseases as diphtheria, scarlet fever, measles and whooping cough.

Rabies in a mild form is still prevalent in the vicinity of Fifty-fifth and Halsted streets. During the winter three dogs have been sent to the laboratory from this locality. Post mortems on the animals showed them suffering from hydrophobia. During the last week a cow at 4,800 Michigan avenue was bitten by a dog that also bit some horses and then escaped. Measures have

been taken to prevent the disposal of this cow until it is certain as to the result of the bite.

Persons having valuable dogs in this neighborhood should keep them shut up, as it is reported that a dog affected with rabies is still at large.

CANADA.

Will the Cigarette Be Banished from Canada?—During the past week the cigarette and cigarette smoking has been under discussion in the Canadian House of Commons on a motion for the prohibition of the manufacture, importation and sale of the "white coffin nail," as the little weed was named by one of these denouncers. The motion carried by a vote of 103 to 42, but to give this decision effect a bill will have to be introduced by the government.

Victoria, B. C., Isolation Hospital.—During 1902 the number of patients treated in the Victoria, B. C., Isolation Hospital numbered 92 as against 80 for 1901. The total days' stay was 2,101 as against 1,743 for the previous year. The total cost of maintenance for 1902 was \$9,279.44, as compared with \$5,925.93 for 1901.

Personals.—Dr. Colin Campbell, formerly house surgeon in the Toronto General Hospital, and later on the C.P.R. "Empress of India," has recently been appointed house surgeon of the Royal London Ophthalmic Hospital, City Road, E. C., the oldest and most famous eye hospital in the world.

Making Doctors by Act of Parliament in Quebec.—A committee of the Quebec Legislature is at the present time engaged in the benevolent task of making lawyers, druggists, dentists and doctors by act of Parliament. Presumably some of these fortunate, if incompetent, individuals have found that the examination is a superfluous way of becoming licensed to practise in Quebec, and have thus resorted to the simple process of getting a bill passed by the legislature. When a legislative body commences this practice, there is no telling where it will end.

The French-Canadian Medical Society of Montreal.—On the evening of Thursday, March 26, there was held in the buildings of the University of Laval, Montreal, a very largely attended meeting of the French-Canadian Medical Society, of that city. The Roddick law for interprovincial registration, now known as the Canada Medical Act, 1902, was the chief topic for discussion; and in response to the query as to whether the Society favored the general idea of interprovincial registration, there was an enthusiastic affirmative voice.

The Canada Medical Act in the Quebec Legislature.—The ratification legislation required from the Quebec Legislature for the Roddick law is now in its second reading in that House. The opinion prevails pretty generally in medical circles in Montreal that the country practitioner of French-Canadian extraction is going to kill this measure outright. In moving the second reading of his bill, Mr. Hutchison explained at full length the measures and provisions of the Canada Medical Act, stating that there were French-Canadians all over the Dominion of Canada who wanted to have physicians of their own nationality and language, and that therefore the province of Quebec had more to gain by this act than any other. The second reading of the bill is being opposed by Dr. Pellitter on the grounds that it is not good for the profession, and that the standards of the other provinces are not up to that of Quebec. This latter will be a piece of news for the other provinces.

GENERAL.

Women Physicians in Russia.—The Medical Institute for Women in St. Petersburg recently gave di-

plomas, after a five years' course, to 111 students, 93 of whom passed their examinations "with distinction."

Navy in Need of Young Surgeons.—There is a great demand in the navy for young medical officers. The need of assistant surgeons in the medical corps is very great, there being at the present time twenty-seven vacancies in that grade. Surgeon-General Rixey is trying to attract young medical men into this service. He is now in the South inspecting a hospital at Pensacola. He intends addressing several medical colleges and calling to the attention of the students the desirability of a naval career. Not long ago he delivered an address at the Jefferson Medical College, in which he dwelt upon the opportunities for young medical graduates in the navy. The work to be performed by the medical corps in the navy is growing every year. The authorized strength of the navy now is about 38,000 and within the next six years will probably reach 50,000. The enlistments and reenlistments require the constant attendance of surgeons to make physical examinations and besides this routine work there are fourteen naval hospitals, with naval stations, navy yards and receiving ships, where the services of members of the medical corps are needed. Applicants for admission in this branch of the service must be between 21 and 30 years of age, physically sound, of good high school education and master of their profession to a degree that would insure a successful career in civil life.

Denver Academy of Medicine.—The Denver Academy of Medicine, formed to maintain a home and meeting-place for the profession, and to provide for a medical library, was organized March 31. The officers chosen for the ensuing year were: President, Henry Sewall. Vice-President, George B. Packard. Trustees, W. A. Jayne, W. W. Grant, Thomas H. Hawkins, L. E. Lemen, H. W. McLauthlin, I. B. Perkins. Secretary, C. K. Fleming. Treasurer, Frank E. Waxham. Librarian, C. D. Spivak.

To Pasteur Institute.—The Figaro states that Dr. Emile Roux, the sub-director of the Pasteur Institute, intends to donate the Osiris prize of \$20,000, which has just been awarded him, to the Pasteur Institute. This prize was founded by M. Daniel Osiris, a wealthy Parisian, to be awarded to the person that the Institute of France considered the most worthy to be thus rewarded. The Institute of France chose Dr. Roux as the recipient.

Football and Accidents.—The football controversy has been much simplified during the past week through Prof. E. G. Dexter's statistics of football accidents printed in the *Educational Review*. His figures are based upon returns from sixty colleges, cover ten years of time, and include the records of 1,374 separate teams. Out of the 22,766 men who had been members of these college elevens 654, or 2.9 per cent., had received injuries serious enough to necessitate absence from college exercises. Professor Dexter estimated the ratio of permanent injuries at one for every 2,846 players. Probably few of the rougher sports—such as hockey, polo, riding to hounds—could make so favorable a showing, and it appears that the agitation for change in the football rules should bear, not upon the danger of the game, but upon the dulness and brutality of the spectacle of twenty-two men butting and striving and finally falling into a heap. This manner of play is foolish and demoralizing, even though it be not in any special sense dangerous; the Rules Committee should legislate fearlessly against it. Finally, the fatalities and serious accidents which are reported every year to the discredit of football occur chiefly among unseasoned or very young players, who should not be attempting a game that requires the most perfect condition and training.

Yellow Fever Mosquitoes and Ocean Vessels.—Assistant Surgeon Grubbs, in charge of the Gulf quarantine station, has just issued a bulletin in which he has settled the question as to what extent and under what circumstances mosquitoes infected with yellow fever germs can be carried by vessels. From June to November last he inspected vessels arriving from ports where the presence of the *Stegomyia* render them liable to infection. Of the eighty-two vessels from possibly yellow-fever ports, sixty-five had no mosquitoes on board at any time during the voyage; five had the insects on board at port of departure; nine reported the appearance en route of *Culex*, or harmless mosquitoes, and three brought *Stegomyia* to the station. All three of the last group were from Vera Cruz, a yellow-fever port, and the voyages lasted on an average seventeen days. Surgeon Grubbs gives the mosquito history of each of the three and reaches these conclusions: First, that mosquitoes can come aboard a vessel under favorable conditions when the vessel is not over fifteen miles from shore; second, that *Stegomyia* can be carried from Mexican or West Indian ports to those of our Gulf States; third, that they can board a vessel lying at anchor a half mile or less from shore, being conveyed by the open lighters used or flying aboard, and, finally, that a vessel moored a short distance from land may become infected with yellow fever, our old beliefs to the contrary notwithstanding.

Death Rates and the Census.—According to the *Evening Post*: "In the course of an important criticism of the vital statistics of the census of 1900, published by the American Statistical Association, Frederick L. Hoffman, the well-known statistician of the Prudential Insurance Company, says: 'Too much emphasis cannot be put upon the primary consideration of the elements of the population in different communities with due regard to age and sex. Whatever may be said against the use of crude death rates, which are as misleading as they are generally applied to unworthy purposes, applies with special force to specific death rates for different periods of life, and for cities where other race elements than the native white go far toward the making up of the larger part of the population. To carry this point a little further, I may quote the death rate at the age period of 25 to 34 years for Natchez, Miss., given as 35.1 per thousand, against a death rate of only 9.0 per thousand for Newark, N. J., but Natchez has a negro population of 58.1 per cent., whereas that of Newark forms only 2.7 per cent. of the total.'

"It is this indifference to the age and race distribution of the population which has led to such false views in regard to the health of tropical cities, especially Havana, Cuba. If the mortality of Havana is analyzed by age periods, and with due regard to color, it can be shown that, while the death rate of white males, ages 40 to 49 years, is 16.2 per thousand in Washington, D. C., it is 31.8 per thousand in Havana, Cuba—a very radical and material difference, wholly out of proportion to and not at all indicated by the crude death rate, which represents the local mortality as fairly satisfactory. The crude death rate very rarely, if ever, can be relied upon in making comparisons of the mortality of different communities, although it is a fairly satisfactory index factor of local conditions where the mortality of a given city is compared with itself for a period of years."

Obituary.—By the death of Dr. Guy Bryan Miller at Paris on Tuesday last, New York has lost one of her most promising young men in the very beginning of his career. Dr. Miller has only just completed his work at St. Luke's Hospital, after graduating at the College of Physicians and Surgeons in 1898.

CORRESPONDENCE.

MUSCLE TONE AND THE REFLEXES.

To the Editor of MEDICAL NEWS:

DEAR SIR: In your issue of March 28, page 618, Drs. Fraenkel and Collins make the statement as a result of their studies of muscle tone that "whenever the neurogenic tone was markedly increased or decreased the tendon-jerks were increased or decreased correspondingly." They also conclude "that disease of the posterior tracts caused hypotonia (hypomotoria) and disease of the pyramidal tracts caused hypertonia (hypermyotonia)." Their conclusions were based upon the examination of 230 patients. I fail to notice among any one of these cases any cases of the so-called combined scleroses, particularly that variety usually spoken of as ataxic paraplegia.

I have the records of four cases of ataxic paraplegia recently observed, in each of which the classical symptoms of that syndrome,—marked ataxia, increase of knee-jerks, double ankle clonus, no sensory changes, no fulgurant pains, no Argyll-Robertson's pupil, no optic atrophy, and no bladder symptoms, and yet each one of these cases presented such marked hypomotoria that it was possible to bring the knees to the face without any flexion whatever, and without producing any sense of pain or tension in the hamstrings.

In October, 1901, I presented one of these cases to the Cuyahoga County Medical Society for the particular purpose of calling attention to this degree of hypomotoria in a condition where we would naturally expect increased tone of the muscles because of the marked increase of the reflexes. For the past three years I have taught that in most spastic conditions we have hypermyotonia, but whenever we have an affection of the posterior columns of the cord, notwithstanding the spastic symptoms which may be present, and due to involvement of the pyramidal columns we nearly always observe hypomotoria.

In the discussion which followed Drs. Fraenkel and Collins' paper, Dr. Walton called attention to the occurrence of hypomotoria in the spastic condition seen in Erb's type of syphilis of the cord. I have observed this in several such cases.

In a case of epidural tuberculous abscess of the posterior and right side of the cord which presented all of the classical symptoms of an ataxic paraplegia, marked hypotonia existed.

Also, in a case of alcoholic neuritis of sudden onset in a young man of twenty-eight years, in which ataxia was most marked, hypomotoria was present.

In two cases of undoubtedly multiple sclerosis whose axial symptom is a marked ataxia, hypomotoria is well marked, notwithstanding the increased knee-jerks, double ankle clonus, jaw-jerk and nystagmus. My clinical experience does not at all bear out Dr. Collins' statement that Dr. Fraenkel has established the relationship between myotonus and the reflexes. Indeed, it seems to me that in organic spinal ataxias, whether we have spastic symptoms or not, we are quite certain to find hypomotoria.

Since the word hypertonus has been used for many years by the oculists to describe the increased muscular tension in the ocular space I have heretofore objected (*Philadelphia Medical Journal*, Nov. 11, 1899) to using the words hypotonia (Fraenkel's sign) and hypertonia (Kernig's sign) but believe that when we wish to describe normal muscular tone we should say myotonus; when the tone is excessive, hypermyotonus, and when lessened, hypomotoria. These terms express clearly and scientifically our meaning, and if etymologically correct, as I believe them to be, should be used.

CLEVELAND, April 2, 1903.

CHARLES J. ALDRICH.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

EXCRETION OF SODIUM AND POTASSIUM IN CASES OF RENAL DISEASE—HUMAN AND BOVINE TUBERCULOSIS—TREATMENT OF EPILEPSY—A CASE OF HYPERPYREXIA ASSOCIATED WITH THROMBOSIS OF THE VENA CAVA INFERIOR.

Dr. W. P. HERRINGHAM, at the meeting of the Pathological Society of London, held March 3, 1903, read a paper on the Excretion of Sodium and Potassium in Cases of Renal Disease. In experiments on the toxicity of urine when injected into the blood of animals, an account of which was given to the society three years ago, he had been led to disbelieve Bouchard's explanation and to conclude with Feltz, Ritter, Astachensky and others, that all the symptoms seen in rabbits might be accounted for by the potassium salts held in solution. There was no necessary connection between the toxicity of urine and uremia. Indeed it seemed to him probable that uremia was not due to the retention of any normal product, but to something abnormal. In patients who died there was found great, in some cases complete, retention of sodium. He had made 16 analyses in 11 cases of chronic interstitial nephritis, and of these six were fatal. In every one of them the sodium excretion was nil or very small. It was not so in any of the five cases which did not end fatally. He had made 20 analyses in nine cases of diffuse or parenchymatous nephritis and of these two were fatal. Both showed complete absence of sodium from the urine on one or more days. None of the seven cases in which recovery resulted exhibited this. Thinking that it might be due to diet or that the sodium might be passed in the feces he had in one case of interstitial and in one case of parenchymatous nephritis analyzed the diet, the urine and the feces for a series of days. These were included in the numbers given above. Retention of sodium was not, however, peculiar to Bright's disease. Salkowski had already shown it to occur in several acute fevers. Dr. Herringham had also found it in two cases of large ascites repeatedly tapped. In one of them there was no sign whatever of kidney disease, but the other was a doubtful case. The latter had left the hospital and could not be traced; the former was still an in-patient. The retention could not be supposed to be due to inability of the kidneys to excrete sodium while excreting potassium freely. It must be due, therefore, to some need of sodium within the organism. In the case of a large ascitic effusion yielding roughly 20 pints every fortnight of fluid containing 0.3 per cent. of sodium the need was obvious. But this did not seem to apply to the cases of interstitial nephritis which had little edema.

Dr. NATHAN RAW, at the meeting of the Liverpool Medical Institution held Feb. 26, 1903, read a paper upon Human and Bovine Tuberculosis. It must be admitted, he said, that the great body of experimental evidence was in favor of Koch's first contention that the two diseases were distinct. Phthisis pulmonalis was essentially a disease of young adult life. It was rare to see it as a primary infection under twelve years, the great majority of deaths taking place between the ages of thirty and forty years, as his tables would show. On the other hand, strumous or tuberculous joints, enlarged joints, spinal diseases and abdominal tuberculosis with tabes mesenterica, were essentially diseases of infancy and childhood, and were only rarely seen in adult life. From these general clinical and pathological observations, Dr. Raw inclined to the opinion that primary intestinal tuberculosis, tabes mesenterica and other tuberculous affections of the serous membranes in children were probably bovine tuberculosis conveyed by milk and were not in any way related to human tu-

berculosis, although the bacillus of Koch was found in them all and was identical. Veterinary authorities, such as Nocard, Bang, Dollar and McFadyean, agreed that about 30 per cent. of dairy cattle suffer from tuberculosis. Dr. Raw wished to point out that the infection commenced in the mesenteric glands from the intestines, slowly spread to the retroperitoneal glands, then through the diaphragm to the glands in the posterior mediastinum and finally to the lungs. If the child lived long enough, the brain might be affected too. At necropsies this remark had been corroborated again and again. Dr. Raw stated that taking all these facts into consideration, and after a careful study of tuberculosis in all its forms during the last ten years, he was of opinion that bovine tuberculosis was very virulent for children and was accountable for tabes mesenterica and other varieties of abdominal tuberculosis, in fact, that it was more virulent to children than was human tuberculosis. There was much evidence, also, that acute miliary tuberculosis, especially that of the typhoid form, was in reality a bovine tuberculosis produced by ingestion of food. Considering that tuberculosis was so common, and even increasing in this country, among dairy cows, something ought to be done by the legislature to prevent the wholesale distribution of tuberculous milk to the public. A more rigorous inspection of dairy cattle should be made by the health authorities, and as it was perfectly easy and certain by the tuberculin test to diagnose a tuberculous cow there should be no difficulty in at least eradicating the disease from dairy cattle. The onus of responsibility of supplying pure milk to the public should not rest on the health authorities, but on the producer, and although the health authority could do a splendid and humane work by providing the public with sterilized milk at a cheap rate, still the real responsibility must be with the man who actually delivered the milk for sale to the public.

Dr. F. W. EURICH, at a meeting of the Bradford Medico-Chirurgical Society, held Feb. 17, brought forward a communication upon the Treatment of Epilepsy, chiefly with reference to the theory that there is in epilepsy an excessive storage of sodium chloride in the body. He detailed a number of cases which had been very successfully treated by comparative privation of salt and its replacement as an article of diet by sodium bromide, about half an ounce of which was taken each week. In one case intermission of the fits had been produced. When the patient began to take salts again freely the fits at once recommenced, but were stopped again when the ingestion of salt was discontinued. Trinitrin in occasional doses was useful in relieving headache.

Dr. R. HUTCHINSON, at the meeting of the Therapeutic Society, held Feb. 17, 1903, read a paper on the Use of Acid Sodium Phosphate in Alkalinity of the Urine. The alkalinity of the urine was estimated either by precipitating alkaline phosphate by barium chlorides and then estimating the acid phosphates by adding uranic nitrate solution or by adding phenolphthalein and titrating with a standard solution of alkali. He found that mineral acids, even in large doses, had very little effect in rendering the uric acid, nor did organic acids have more than a slight effect, but the acid sodium phosphate had a marked influence on the reaction. It had been tried with very satisfactory results in cases of cystitis and it was found particularly useful after operations on the bladder to keep the urine acid. The dose was from 30 to 60 grains every three hours, but it was best given by dissolving two grams in a pint of water allowing the patient to drink it from time to time. If diarrhea was produced, the drug should be stopped for a short time.

Dr. FOTHERGILL, at the meeting of the North of Eng-

land Obstetrical and Gynecological Society, held February 20, 1903, recorded a case of Hyperpyrexia associated with Thrombosis of the Vena Cava Inferior. The patient was delivered by a midwife on March 21, 1902. Fever set in and became intensified until patient's removal to a hospital on the fifth day. Improvement followed intra-uterine douching at first, but a relapse occurred on March 31, so the uterus was curetted, several pieces of placenta being removed. On April 6, the temperature reached 111.2° F., but was reduced to 107° F. by hot sponging. Thrombosis of the right femoral vein was quickly followed by involvement of the left, and from this time onward until the patient's death on May 14, there was no special symptom except increasing weakness, though the temperature continued high and remittent, with repeated rigors. There was no sign of suppuration or embolus in any other organ. The immediate cause of death was edema of the lungs. The necropsy showed that the uterus and other pelvic organs were normal; there was no sign of general or pelvic peritonitis; the inferior vena cava and its tributaries were filled with antemortem clot from the heart downward. He was inclined to regard the curetting as the cause of the thrombosis.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, held Thursday, March 19, 1903.

The President, Andrew H. Smith, M.D., in the Chair.

The scientific business of the evening consisted of a Symposium on Typhoid Fever in Infants and Children.

Infantile Typhoid Infrequent but Possible.—This, the first paper of the evening, was read by Dr. J. Lovett Morse, of Boston, Mass., and its subject was the occurrence of fetal and infantile typhoid. He said that when symptoms of continued fever occur in infants and young children at a time when there are other cases of typhoid fever in a family, then typhoid fever must be suspected even in the very young. In a certain number of cases, the disease runs a more or less typical clinical course, but in many others the symptoms are atypical and only a positive Widal reaction makes the diagnosis assured. In 32 cases, observed in Boston, in children under two years of age, 23 gave the Widal reaction, four were diagnosed by the presence of bacteria in the stools and five by positive Widal and bacteriological tests. It is evident then that careful investigation must be made of all cases of continued fever in very young children, whenever typhoid fever exists in a neighborhood.

Mortality of Infantile Typhoid.—Of the patients under observation in Boston 16 died, making a mortality of 50 per cent. This is, of course, much higher than the usual mortality among adults. Dr. Morse does not consider, however, that the average mortality of infants in typhoid fever can be deduced from so few cases, and while it is probable that typhoid fever is more fatal in very young patients, the mortality is probably not more than twice as great as among adults, say from 25 to 30 per cent. of the cases. Death took place in the fatal cases as an average on the eighteenth day. Where the cases were not fatal the average duration of the disease was 29 days. Diarrhea occurred in about 80 per cent. of the cases, and seems to be a much more frequent symptom among children than among adults. In two cases the initial symptoms of the disease seem to be those of meningitis, and the deaths which

took place are evidently due to meningeal involvement by the typhoid bacillus.

Conditions of Typhoid in Children.—It is evident that the occurrence of typhoid fever in children depends more on their environment than on the question of immunity or protection. Cases of the disease are not seen frequently in Boston or New York, but they are much more frequent in Philadelphia and Chicago. The reason is not far to seek. The opportunities for infection in Philadelphia and Chicago are much more frequent, but if the question of the susceptibility of infants to typhoid is to be determined scientifically, then the study of many more cases by modern diagnostic methods, especially the use of the Widal reaction and of bacteriological auxiliaries, is needed. At the present time it can only be said that while cases of typhoid fever do occur among very young infants, that is, under two years of age, the disease is really infrequent and not only apparently so. Dr. Morse's paper will appear in full in a subsequent issue of the *MEDICAL NEWS*.

Fetal Typhoid Fever.—Dr. J. P. Crozer Griffith, of Philadelphia, said that there are at present in the literature ten cases of fetal typhoid in which the typhoid bacillus was recognized in the blood or the tissues of infants just born of mothers suffering from typhoid fever. This fact serves to show that of themselves very young infants have no natural protection against the disease, but that if placed in circumstances in which infection is liable they suffer from it. In all 23 cases of congenital typhoid, that is, typhoid fever that ran its course after the birth of the infant as a result of infection from a mother suffering from typhoid fever have been reported. Some of these cases were really not typhoid fever, but some other affection, but undoubtedly many of them were true typhoid. Dr. Griffith said that in recent years a manifest change has taken place among the medical profession with regard to the occurrence of typhoid fever in very young children. At a discussion in 1892 the consensus of opinion was that under the age of two years typhoid fever was extremely rare. In 1897 and 1898 this opinion was modified to the extent of admitting the possibility of typhoid occurring oftener than had been thought. In 1900 opposing opinions had been much shaken and infantile typhoid fever was generally admitted to be far less rare than had been supposed. The immunity of infants was evidently very slight and the infrequency of the disease among them was due rather to the absence of opportunity for infection. At the present time there is a growing sentiment that the disease occurs far too often among children to be called rare. Of course, breastfed infants are largely exempt, because of the absence of opportunities for infection and the careful preparation of artificial food with methods of sterilization by heat saved many others from the disease. Of absolute immunity, however, there is evidently little.

Typhoid Symptoms in Young Children.—Two sets of symptoms are important in the very young. First nervous symptoms overbalance the intestinal manifestations. Second the fever seldom runs the regular course so usual among adults. Among young children, that is, under ten years of age, walking cases of typhoid fever are quite common. Under two years of age a sudden onset of symptoms is quite frequent. This may take the form of a chill or a vomiting spell, and Dr. Griffith has seen one spell of fatal uncontrollable vomiting. Epistaxis is not so common as among adults. Diarrhea is more or less frequent in different epidemics. This year, out of a large number of cases admitted to the children's hospital in Philadelphia, very few have been without diarrhea. In other epidemics the diarrhea was not marked as a symptom of typhoid fever in young children. In very young children diarrhea is

certainly not common. In the fetus no involvement of the intestines has been found in reported cases. The Widal test is extremely important for the diagnosis of typhoid fever in children, because of the anomalous course the affection is likely to run. Dr. Griffith's paper will appear in a subsequent issue of the MEDICAL NEWS.

Etiology of Typhoid Fever in Children.—Dr. A. B. Blackader, of Montreal, Canada, said that typhoid fever occurs in children as the result of direct infection of the intestinal tract. The uncleanly habits of children, in respect to what they put in their mouths, are especially responsible for the occurrence of the disease among them. The affection usually develops among the poorer classes, where overcrowding provides opportunities for children's hands to become affected by contact with typhoid fever patients or their excreta. In the household, flies probably play a prominent rôle in carrying infectious material which they deposit on articles of food whence the typhoid bacilli find their way into the digestive tract, even of young children. It is well known that typhoid fever, which is extremely frequent in Tunis, is due to the fact that there is very little provision for the removal of excrementitious material. Notwithstanding opportunities for infection and the lack of precautions, typhoid fever is not, in Dr. Blackader's experience, frequent among very young children, though he does not consider that they can be said to have any special immunity to the disease.

Typhoid Statistics in Montreal.—Dr. Blackader has seen some 398 cases of typhoid fever at the Montreal General Hospital. Of these four cases were in patients under five years of age. Eight were below ten years of age, 32 were under fifteen years of age, 80 were under twenty years of age and the great majority of the cases occurred under thirty years of age. There would seem to be a distinctly lessened susceptibility to the disease late in life. On the other hand, the earlier years, that is under ten, do not seem to be as liable to the disease as juvenescence and early adult life. It must not be forgotten, however, that these are hospital statistics and that children are much more likely to be treated at home than are adults, as no mother is able to persuade herself that anyone can take care of her child as well as herself. The histories of the cases of the disease in children seem to indicate that stomach disturbances do not predispose to the occurrence of the affection. A strongly acid stomach would, on the contrary, prevent the development of typhoid bacilli as luxuriantly as would otherwise be the case. It is not unusual for typhoid to run its course with other diseases. Hektoen has recently reported a case in which he found typhoid bacilli in the blood of a sufferer from scarlet fever.

Special Symptoms in Child Typhoid.—The temperature course of the disease in Dr. Blackader's experience is not that usually characteristic of typhoid. Goodwillie's steplike rise of temperature, at the beginning so characteristic of the initial stage of adult typhoid, is usually absent. Certain of the supposed special symptoms, however, of child typhoid, are really due to other causes. Special rashes have been reported, but these, in Dr. Blackader's experience, are due to the administration of some drug, as quinine or one of the coal-tar series.

Furfuraceous conditions so often reported from France and other European countries are not usual in this country, probably because of the greater frequency with which full baths are taken. A few small petechial spots do not add to the gravity of the prognosis of typhoid fever in children, but large ecchymoses are an unfavorable sign. Dicrotism of the pulse very

rarely occurs in children during typhoid fever. Relapses are less frequent in the early years of life than among adults.

Diagnosis of Typhoid.—Dr. L. Emmett Holt said that a certain number of obscure conditions causing fever and a tendency to a restlessness are sometimes spoken of by practitioners as typhoid fever. The conditions most frequently thus misnamed are obscure pneumonia, chronic colitis, obscure nephritis, and certain cases of influenza. Notwithstanding the greatest possible care, a certain number of cases of continued fever in children will escape the best skill and will have to be treated symptomatically, without any absolute diagnosis. The question in the minds of many practitioners is that these cases are typhoid fevers in children frequently overlooked. A certain proportion of practitioners are likely to assume that because a continued fever is not demonstrably anything else, that it may be typhoid fever. Certain it is that typhoid fever is very rare in children. During the present fall and winter, while the wards of the Philadelphia Hospital for children's diseases were so crowded that it was difficult to obtain material for teaching purposes other than typhoid, Dr. Holt has had but one case in his wards in New York. In 14 years of service at the Babies' Hospital, here in New York, Dr. Holt has seen but three cases of typhoid fever under the age of two years and feels justified in concluding that the affection among infants is exceedingly rare in this city. As to conditions in other cities nothing can be said by those who have not experienced them. Good observers as Dr. Griffith, Dr. Blackader, and others have seen typhoid fever at this early age and their observations must be accepted at their full value and as indicative of the fact that under circumstances favorable for infection even very young infants do acquire the disease.

Presumption Against Typhoid in New York.—Dr. Holt said in conclusion that in cases of continued fever in New York where the diagnosis is difficult or, for the time, practically impossible the presumption is distinctly against the affection being typhoid in very young children. Of course, the diagnosis can not be made from the clinical symptoms for in children the affection runs an anomalous course very difficult of recognition. The symptoms are much more likely to be cerebral than intestinal. The nervous symptoms are likely to predominate all during the disease. It is important, as Dr. Griffith insists, to suspect certain cases of meningitis of being typhoid fever and, on the other hand, the practitioner must not be surprised to have typhoid fever develop meningeal symptoms in very young children. The beginning of the affection is apt to be more sudden in adults and the skin eruption is likely to be more profuse. Dr. Holt had one case under observation in which practically the whole body was covered by rose spots. This patient was so interesting that the case was seen by many physicians. The diagnosis must depend, in most cases, on the presence or absence of the Widal reaction and the various bacteriological tests.

Infantile Typhoid in New York.—Dr. William P. Northrup, in discussing Dr. Griffith's paper, said that there has been no typhoid fever at the New York Foundling Hospital for 25 years, though the children have been under the supervision of such excellent authorities as Dr. J. Lewis Smith and Dr. O'Dwyer for most of the time. It is very evident to his mind that typhoid fever is not only comparatively rare among children but absolutely so infrequent as to be one of the last things to be considered when continued fever of obscure origin in very young children is under consideration. When it is realized how many cases of typhoid there are, for the

disease is one of the constant scourges of great city life, it will at once be recognized how extremely rare, even according to these figures, are cases of typhoid fever in very young children.

Comparative Statistics of Infantile Typhoid.—According to the last census there were 35,000 deaths from typhoid fever in the United States during the year 1900. Accepting for the moment that the mortality rate of the disease is 17.5 per cent, this would mean that there were 208,000 cases of the disease in the United States during that year. The mortality rate taken is so high that it will easily be understood that this is a very conservative estimate. During that year typhoid fever was not especially epidemic in the United States, so that it was not unfair to assume that the disease prevailed with equal frequency in other years during the last decade. This would mean that there were over 2,000,000 cases of the disease in our country during the last ten years. If we could estimate for the world, supposing the same amount of typhoid existed everywhere, and supposing that we have about one-sixth the population of the earth, which is of course a very high estimate, there have been 12,000,000 cases of typhoid in the last decade throughout the world. As compared with this, we have some 400 cases collected from the literature by Dr. Griffith, who confesses that about 100 of these were probably not typhoid and that there may be a reasonable scepticism with regard to some of the others. It is perfectly allowable then to be sceptical with regard to the occurrence of typhoid among very young children, since, even on the basis of the statistics furnished by those who treat the disease most frequently, the comparative infrequency is clear.

Typhoid Fever Simulants in Infants.—The affections which are supposed clinically to resemble typhoid and which are diagnosed as such by many of those who think typhoid fever not rare in infants, are central pneumonia, influenza, malaria, and certain obscure enteric diseases with occasionally nephritis and some of the metabolic diseases, the essential anemias and the like. Grip, central pneumonia and malaria particularly must be carefully eliminated before there can be any thought of typhoid in the case. At the present time, the medical profession is not in a position to discuss the frequency of typhoid fever in children, until further investigation by means of exact methods with the Widal reaction and the bacteriological tests have shown the absolute frequency of the disease. Much time and labor has been wasted over academic discussions up to the present time. Typhoid fever in infants is certainly much rarer than in adults and is absolutely a very infrequent affection, so that it scarcely needs to be thought of in connection with the first two years of life.

Typhoid Atypical in Children.—Dr. H. Koplik said that typhoid fever is apt to run a very atypical course in children and that consequently the diagnosis of the disease may easily be missed. Not long ago Professor Koch asked for reports with regard to the possibility of typhoid among children. Special attention was paid to the subject and seven cases were reported. Careful investigation, however, showed that 70 schoolchildren absent from school were really suffering from typhoid fever, though the disease was mostly unrecognized. The majority of these were walking cases, the children's general condition being somewhat disturbed, but not enough to make them keep to their beds. Koch demands for the proper diagnosis of typhoid fever, not only the Widal test, but also the presence of bacteria in the feces. Dr. Koplik does not think that typhoid fever is so rare in New York, among children, as might be considered to be the case from Dr. Holt's recent experience. In Dr. Koplik's service of 30 beds, there have

been during the present winter as many as fourteen cases of typhoid fever, in patients from three to fourteen years of age. More could have been admitted if there had been room for them. Dr. Koplik considers that the course of typhoid fever in children is so atypical that the Widal reaction must be depended on for a diagnosis. At times its presence is noted so late in the affection as to make the clinical course of the case very puzzling for absolute diagnosis may be impossible without it.

Dr. Morse, in closing the discussion, said that the type of typhoid fever in children is essentially the same as in adults. With regard to the cases collected from the literature by Dr. Griffith, a careful study of the individual reports seems to show that more than one-half of them were not true typhoid.

Dr. Griffith, in closing the discussion, said that in adult patients, when continued fever occurs for which no other cause is evident, typhoid is suspected. The trend of present thought is toward the conclusion that the same thing may be true in infants, though formerly typhoid fever was the last thing thought of. As a result of the impression that typhoid fever does not occur in infants, Dr. Griffith has been called in consultation in a case where there were typical typhoid fever spots, though the physician had not recognized the disease. Children are protected by their habits of life, but not by nature. It is dangerous then to say in textbooks that typhoid fever practically does not occur in very young children. Dr. J. Lewis Smith, in his textbook of the diseases of children, does not say that the disease is so rare under two years as Dr. Northrup would have us believe.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting held at the New York Academy of Medicine, March 9, 1903.

The President, Andrew H. Smith, M.D., in the Chair

Suprascrotal Operation for Varicocele, with Ligation of the Spermatic Artery.—The first paper of the evening was by Dr. E. Styles Potter, on this subject. He enumerated the indications for operation as follows: (1) Very large varicocele causing perceptible deformity; (2) pain in the tumor or obstinate reflex neuralgia; (3) aberration of the sexual function; (4) severe and obstinate dermic lesions of the scrotum; (5) interference with the patient's occupation; (6) atrophy of the affected testis; (7) disease of the opposite testis; (8) psychopathic symptoms; (9) desire to enter public service, military, naval or civil; (10) double varicocele, involving danger of serious impairment of the sexual function; (11) varicocele complicating hernia or hydrocele; (12) rapid increase in size. Among the more common of the numerous operations are the following: Excision of the scrotum; compression of the veins by pins and wires; subcutaneous ligature; Ricord's method of tying the veins; Rigaud's method of exposure; excision when the operation is performed through the scrotal tissue.

Of late years the favorite operation has been the open one; excision through the scrotal tissues, excision of the veins, and end-to-end ligation of the stumps. Its disadvantages are mainly in the point of election. Dr. A. E. Bradley, U. S. A., has recently been performing a suprapubic operation. The incision is over the external abdominal ring from the spine of the pubis, as in hernial operations, and is about 2½ inches in length. The veins, having been

drawn through the incision with the cord, are separated, ligated and incised. In the operation which Dr. Potter has been doing for the past year, and which he has found to give most satisfactory results, the incision begins at the external abdominal ring and extends downward for about $1\frac{1}{2}$ inches, directly over the course of the cord, and ends just above the scrotal tissue. The tissues are divided down to the cord, and then the cord, vas, artery, nerve and pampiniform plexus of veins are drawn through the incision. The vas and nerve are separated, and the veins, artery and connective tissue ligated above and below. The intervening portion is then removed. The ligatures are left long, and a ligature is passed through the stumps and tied; which brings the two stumps in perfect apposition. Then the remaining long ends of the ligatures are tied, and this brings the point of contact in perfect end-to-end apposition and acts as a natural suspensory for the previously dragging testis. Finally, the cord is returned and the external wound closed.

Advantages.—The advantages claimed for this operation are: (1) The incision being above the scrotal tissue, a far neater dissection is possible and there is required less manipulation of the parts, with the resultant dangers of oozing reduced to a minimum. (2) The relations of the parts are more easily discerned, which renders the operation possible in about one-half the time of the open scrotal operation. (3) A better application of the dressings is admitted of than can possibly be obtained in the operation on the scrotum, thereby reducing to a minimum the danger of infection occurring through displacements of the dressings.

As the spermatic artery is deeply situated it seems probable that it is frequently accidentally included in the ligature in the various operations for varicocele, and especially by the subcutaneous method. The spermatic artery furnishing the main blood supply of the testicle, it would seem like rather a hazardous procedure, but the artery of the vas, the great vascularity of the scrotal tissues, and the numerous anastomoses are quite sufficient to keep the testis completely nourished. The ligation of the artery, therefore, becomes the most beneficial step in any operation for varicocele, it being nothing more than reasonable to do this at a time when practically all the veins have been suddenly obliterated. In support of his views in regard to the ligation of the artery, he quoted W. H. Bennett in his monograph on varicocele. True atrophy of the testicle following operation is a very rare condition. The testis is likely to diminish in size immediately after the operation, but this is owing to the fact that a large part of the previous bulk was due to the enlarged veins. This apparent atrophy, however, is only temporary, and is followed by a return of the testis to the natural size. Dr. Potter has performed his operation in nine cases, and three of these he narrated.

Ligation of the Artery Advisable.—Dr. W. B. De Garmo said he was a believer in suprascrotal operations. Personally he had been doing them for many years, and he thought he was the pioneer in operating for varicocele through the hernial incision, a point still higher than that selected by Dr. Potter. He had done the Bennett operation chiefly, and he had been in the habit of carefully avoiding the spermatic artery. He was convinced, however, that Dr. Potter was right in ligating it, and said he would adopt that measure in the future. In one case of his own he had included the artery unintentionally. He had watched the patient with great interest, as he felt somewhat anxious about the result; but two years had now elapsed since the operation, and there had been no atrophy of the testicle.

The Results of Operation not Always Good.—Dr.

R. Guiteras said that the results of operations were not always satisfactory. Very often there is left a neuralgic condition of the testis, which had not been previously present. In some instances, however, such a neuralgic condition existed before the operation, and is not removed by it. When it comes on as a result of the operation, the attempt may be made to remedy it by opening the wound again and breaking up the adhesions formed. Sometimes this is successful, and sometimes not, and he referred to one case which was operated on several times by himself and other surgeons, without securing a satisfactory result. In his experience he remembered three suppurative cases. Chromicized catgut was probably the best material for ligature, but care should be taken that it was not of too large size, as it was then apt to cause irritation. This seemed to be the trouble in one of the cases mentioned, and it was nearly two months before he succeeded in removing a piece of ligature which had become exactly like a wire. In one case gangrene of the testis occurred, necessitating its removal.

Perforated Gastric and Duodenal Ulcers.—This was the title of a paper by Dr. A. A. Berg, who said they depended upon two factors, (1) the rapidity with which the ulcerative process extends through the walls of the stomach or duodenum, and (2) the site of the ulcer. It is evident that when the ulceration spreads rapidly through the coats of the viscera, adhesive barriers with neighboring organs will be less likely to form, and extravasation of the contents will probably take place at the time of perforation. The situation of the ulcer determines the character, extent and site of the lesions following upon its perforation, and the location of the extravasation affords at once, upon opening the abdominal cavity, information as to the probable site of the ulcer—an important time-saving consideration. When extravasation occurs into the free peritoneal cavity, septic peritonitis ensues, the extent of this depending on the time that has elapsed before operative interference. It is well to remember in this connection that the transverse colon and the mesocolon may, and usually do, for a number of hours limit the extravasation to the upper half of the peritoneal cavity; but eventually the intestinal contents make their way to its lower part. This natural limitation of the extravasation for a number of hours affords better prognosis from early operation than is the case with perforating ulcers situated lower down the alimentary canal. It is also worthy of note that the peritonitis caused by the extravasation of gastric or duodenal contents is likely to be of less virulent character. When the extravasation is into the retroduodenal cellular tissue, it there gives rise to abscess-formation which spreads downward behind the ascending colon, even into the pelvis and around the kidney, and which tends to evacuation into some neighboring cavity or viscera. The lesions of neighboring viscera, such as the liver, pancreas, etc., which by adhesion to the floor of a slowly advancing ulceration had prevented extravasation, but by continuity had themselves become involved in the ulcerative process, were also of much importance, but could not now be considered.

Symptomatology.—The ulcer may have been a latent one, so that the perforation furnishes the first indication of its existence. Especially is this the case in duodenal ulcers. Or, it may have given rise to the usual train of symptoms; in which case the perforation may occur during its ordinary course or suddenly during a period of exacerbation. At the time of perforation there is generally a severe tearing pain in the epigastric or right hypochondriac region, which may or may not be accompanied with prostration and collapse.

Locally, the upper half of the abdominal wall is rigid, and does not participate in respiratory movements. There are distinct epigastric pain and tenderness, and more or less tumefaction may possibly be present. Liver flatness on superficial percussion may or may not be obliterated; a tympanic percussion note indicating that a considerable amount of gas has escaped into the abdominal cavity. Vomiting and hematemesis may occur. Hyperleucocytosis at the time of perforation has not been observed in the reported cases. Several hours after perforation the signs of septic peritonitis supervene, and obscure all the other symptoms. During this later period also the liver dulness on percussion varies in different cases. If the perforation is in the posterior wall of the duodenum, the patient goes on to develop a retroperitoneal abscess on the right side of the abdomen.

When to Operate.—As regards this question the cases may be roughly divided into two groups: (1) Those presenting the symptoms of perforation and extravasation into the free peritoneal cavity, and (2) those in which there are evidences of perforation, but no obliteration of hepatic or splenic dulness. Dr. Berg's experience has convinced him that when such dulness is normal, the extravasation is always localized by adhesions of the ruptured viscous to neighboring parts. In the first class of cases, broadly speaking, the operation should be done as soon as a diagnosis is established. In the second, though the urgency is not so great as in the other, there is very little doubt that laparotomy should be performed, and the perforation closed if possible. It may be advisable in some of these cases to wait a few days in order to permit firm adhesions to form around the local extravasation, but operative interference should not be too long delayed. As to shock influencing the time for operation, the depression of the central nervous system is due to the extravasation, and the surest way to relieve it is to prevent further contamination of the peritoneum. Vigorous hypodermic stimulation and subcutaneous infusion will usually suffice to temporarily counteract the shock, and enable the surgeon to proceed with immediate operation.

Operative Treatment.—(1) *Ruptured ulcers on the anterior wall of the stomach or duodenum.* Excision of the necrotic edges or excision of the entire ulcer, followed by closure of the defect by suture, has not yielded as satisfactory results as simple inversion by suture of the ulcer into the lumen of the viscous. In the case of the duodenum the infolding of the wall required for this may so materially narrow the lumen as to necessitate its exclusion by gastro-enterostomy. It has been Dr. Berg's experience that a reduction of the diameter of the lumen of any part of the small intestine to one-half the normal does not result in any marked interference with the passage of contents through it. For the inversion of the ulcer a double row of Lembert mattress sutures of silk or catgut is passed through healthy tissue at the margin of the ulcer. The site of suture should always be covered by omentum or a strip of cavigle membrane, and then protected by a narrow wick of gauze. When extensive infiltration and brittleness of the tissues surrounding the ulcer cause the sutures to tear out, the ulcerated area may be attached to the anterior parieties, or the perforation may be tamponed with gauze. In either case a jejunostomy, by which to administer nourishment, must be established. The peritoneal surfaces and cavity are carefully cleansed of all extravasated material and exudate by gently mopping with soft sea-sponges or sterile gauze. It is his practice not to drain the peritoneal cavity. Such drainage, he believes, does little good, and may lead to secondary infection.

(2) *Ruptured ulcers on the posterior wall of the stomach or duodenum.*—As to the gastric cases, the exudate in the postgastric space is first of all removed by aspiration through the gastrohepatic omentum. To determine the position of the ulcer the finger is introduced into the postgastric space through the foramen of Winslow. If it is near the lesser curvature, access to it will best be gained through the gastrohepatic omentum; if it is near the greater curvature, it will be more easily reached from below, through the transverse mesocolon. During the manipulation the general peritoneal cavity is protected by gauze compresses. When possible, the ulcer is inverted by Lembert mattress sutures; drainage of the postgastric space being provided through a stab wound in the back. When it is impossible to close the perforation, the opening is packed by gauze passing out to the surface through a stab wound in the back, and a jejunostomy established for feeding the patient.

In ruptured ulcers on the posterior duodenal wall, in view of the fact that in the adult the duodenal surface is uncovered by peritoneum, it is almost useless to attempt repair of the perforation *per se*. The sutures will either not hold in the necrotic tissues or through secondary infection will give way; in any event, a duodenal fistula is very apt to follow. In order to avoid this (which always results in speedy death from starvation) Dr. Berg would advise, in cases where the diagnosis is made before operation, that the extravasated material and purulent exudate in the retroduodenal, retrocolic, and perinephritic spaces be drained through a lumbar incision, and the orifice of the ruptured ulcer tamponed with gauze. The abdomen should then be opened, a gastrojejunostomy established, and the pylorus constricted with a purse-string silk suture. The perforated duodenum is thus unilaterally excluded from the intestinal circuit, and leakage of the chyme through the fistula prevented. This procedure is better than a jejunostomy, for gastric digestion is not done away with by it. The duodenal rupture must necessarily close spontaneously, as there is nothing to leak out and keep it open. He had intended doing this operation in his case of ruptured ulcer on the posterior duodenal wall (Case 3), but the wretched condition of the patient forbade any secondary operation. In those cases in which the diagnosis is not made until the abdomen is opened, the exudate is evacuated by incising the peritoneum on the outer side of the colon, and drainage established through a stab wound in the back. Gastroenterostomy and pyloric constriction are then at once performed.

Dr. Berg described four cases which were all operated upon by him at Mount Sinai Hospital.

Importance of an Early Diagnosis.—Dr. H. W. Berg said that the success or want of success in operating depended largely on the earliness of the diagnosis, which must be based on clinical data. It had been his own experience, and that of others, that the cases of perforation in typhoid fever had been unusually numerous during the past season. In making the diagnosis, he said, instead of relying upon shock and pain, as had been the old style, we had now come to place confidence on the rapid increase of leucocytes, and the more or less complete disappearance of hepatic and splenic dullness. The leucocyte count is of more significance in typhoid perforation than in others, because in typhoid fever the number of leucocytes is naturally very low, and any marked increase in the count at once leads to the suspicion of perforation. In one of his cases the patient was operated on in six hours, and in another in three hours after the diagnosis had been definitely made.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.
Regular Monthly Meeting, held Saturday, Feb. 28, 1903.

Palmer C. Cole, M.D., Temporary Chairman, in the Chair.

Innocent Syphilis and Palate Perforation.—Dr. Follen Cabot presented a patient suffering from extensive perforation of the palate with complete exulceration of the vomer and of most of the intranasal tissues. The patient is an Italian forty-nine years of age, who came to this country seven or eight years ago and who stopped at a boarding-house where one of his companions suffered from a severe rash and a sore throat. The patient developed a sore on the lip that took a long time to heal and that was followed by some secondary symptoms in the shape of a rash with some soreness of the throat but nothing very bothersome.

Family Transmission.—The patient is a married man and has two perfectly healthy children who were born in Italy. He was not exposed in any other way, so there is reason to think that the chancre was innocent. Since his wife has come to America, about a year after he had the sore on his lip, there were four miscarriages. A child at present living and about three years of age seems to be in good health. The wife does not seem to have suffered from any external symptoms of the syphilis, and this latest child shows no signs of the disease and does not seem as an infant to have suffered from the affection. There is therefore a complete history of syphilis which has run out as regards hereditary conveyance, yet is proving intensely virulent for the patient himself.

Present Ailment.—About twenty months ago the patient developed a sore in the upper part of his mouth. The palatal tissues very soon began to disappear. He began also to suffer from pain in the head much worse at night and from severe pains in his bones, especially in the shin, with an ulcer of the shin-bone. He put himself under treatment, and at first the character of the malady was not recognized, but later he was given antisyphilitic treatment. For some unexplained reason this did not afford any relief to his symptoms and he was treated by other physicians, all of whom recognized the syphilitic nature of the malady but none of whom seemed to direct their treatment properly so as to stop the ulcerative process.

Mixed Treatment.—About two months ago he came under Dr. Cabot's treatment with an immense hole in the roof of his mouth, showing angry gangrenous patches and an intense fetor. The vomer had already completely disappeared and the interior of the nose had been entirely eaten out with some portions of the ethmoid and other bones in the nasal region. He had lost greatly in weight, was unable to work, had no appetite and had great difficulty in chewing and swallowing his food and was very much disturbed. He was at once placed upon mixed treatment, potassium iodide 25 grains three times a day, gradually increased, and bichloride of mercury, $\frac{1}{2}$ grain, also increased. At the present time he is taking one hundred grains of potassium iodide three times a day and $\frac{1}{2}$ a grain of bichloride of mercury three times a day. Neither of the remedies has had any unpleasant complicating effects. He has not suffered from a single pimple, notwithstanding the amount of iodide he is taking and the bichloride has not disturbed his bowels, or interfered with his appetite, or given any trouble in his mouth.

Results of Treatment.—Within a week after mixed treatment was instituted the headaches disappeared, and he no longer had pains in his bones. The angry gangrenous look began to disappear at the edges of the sloughing ulceration in the mouth and healthy granu-

lation tissue began to make its appearance. At the present time the cavity has decreased in size somewhat, though, of course, there will remain a large opening between the nose and the mouth. His general condition began to improve at once. With the improvement in the sore in his mouth he could eat better and enjoy his food. In the last ten weeks he has gained twenty pounds in weight. He is able to work now, does not feel discouraged, suffers from no pain and sleeps well at night. His ulcerative process was very much improved by local applications of peroxide of hydrogen, and this proved to be the only local treatment that was needed.

Prothetic Apparatus.—The only thing necessary now to make him reasonably comfortable is a prosthetic apparatus in order to close the large opening between the mouth and the nose, and the edges of the cavity look healthy enough now to stand the fitting in of such an apparatus. Owing to the immense loss of tissues in the front part of the mouth, the front teeth have become quite loose and these also can probably be fixed in place by means of a dental plate. Dentists are able to do this sort of thing very effectively now, each case requiring special study, however, to meet the mechanical defects required in it, and there seems no reason to doubt that except for the saddle-back nose, due to the disappearance of the intranasal tissues, the patient can be made very comfortable and even reasonably presentable in appearance.

Tuberculosis of Bladder.—Dr. J. N. Spooner presented for Dr. Cabot a case of tuberculosis of the bladder demonstrating the very curious trabecular arrangement of the muscular fibers of the bladder, due partly to overgrowth and partly to chronic inflammation, that is sometimes seen in these cases. The patient was a man of sixty with a good family history, except that one brother died of phthisis. He suffered for some twelve to fourteen years with a recurrent swelling of the scrotum, evidently a hydrocele, which required to be tapped at intervals. About a year ago, after having been tapped, the hydrocele did not recur. The patient does not know whether it was injected with some irritating material at that time in order to secure its non-recurrence or not. Not long after the last tapping of the hydrocele swellings began to appear in the joint groin. These spread until they involved the whole chain of inguinal glands. The glands were removed by Dr. Fuller and healing took place without complication and without delay.

Present Condition.—The man has some swelling of the testicles and examination shows that his seminal vesicles are chronically inflamed and tender. He has to get up two or three times at night to make his water, but ordinarily has no difficulty in urination and is not especially troubled during the day. It seems probable that his present condition is due to tuberculosis. There may have been a focus of the disease in one of the testicles, running a latent course until the chronic adhesive inflammation set up by the injection of the irritant into the hydrocele tract caused it to light up. This tuberculous process has spread to the inguinal glands and to the seminal vesicles. A cystoscopic examination of his bladder shows the presence of the trabeculated arrangement that has sometimes been seen in these cases, and illustrations of which appear in some of the German text-books on genito-urinary diseases. The trabeculae in the bladder are easy to see with an ordinary cystoscope, and there are suspicious appearances between them that point to some tuberculous ulceration of the mucous membrane of the bladder wall.

Treatment.—As far as possible, the man's general health will be improved, his bowels will be watched

carefully and all tendency to constipation will be overcome. His urine will be kept as unirritating as possible, and he will be advised to pass most of his time in the open air. The case is not as hopeless as it would seem, and will be reported again. The demonstration of the case became impossible, owing to the occurrence of spasm of the urethra, that prevented the insertion of the cystoscope.

Meckel's Diverticulum.—Dr. Frederick R. Wilson presented a specimen of Meckel's diverticulum which had been removed from a patient operated in the Post-Graduate Hospital in the summer of 1900 because of symptoms of intestinal obstruction. Before having been shriveled up by immersion in alcohol, this specimen was over an inch long and had been a real blind sac connecting with the gut which had acquired adhesions to another portion of the intestines, causing complete obstruction of the circulation in this region of the intestines with resultant gangrene.

History of Cases.—Ruysch, in 1701, was the first one to demonstrate the possibility of the existence of a diverticulum of the intestine and toward the end of the century, Morgagni showed that its presence was not as unusual as had been thought, and that the structure was the remains of the vitelline duct of the fetus. At the beginning of the nineteenth century he showed the embryological process by which the vitelline sac was gradually transformed into a small pouch and then obliterated in the process of development. He showed that when the vitelline ducts persisted and formed the blind pouch of the intestines, they have all the coats of that viscous, the mucous, serous and muscular. He showed that about the fourth week of fetal life the yolk sac was at full size, somewhat pear-shaped and supplying all the nourishment for the fetus. At the fifth week retrogression begins, and after this fetal nutrition comes from the mother. The vitelline sac remains visible, however, until the third month. During this time the sac is entirely outside of the body. Only the neck remains within the fetal abdomen, and this becomes obliterated, leaving no connection between the sac and the intestines. This is the formal process, at times, however, fatty degeneration fails to take place, and then Meckel's diverticulum exists to become a source of pathological conditions of various kinds.

Pathology at Various Ages.—If the diverticulum exists in newborn children, it usually occurs about twelve inches above the ileocecal valve. If it occurs in later life, its origin from the intestines may be four feet away from the cecum. The vessels may form a band that runs between the umbilicus and the gut, and the result of the persistence of this fibrous cord may prove a source of intestinal obstruction. Most of the diverticula present in these cases are attached to the umbilicus. A few, however, have attachments to the mesentery. Attachments to the umbilicus are a little more dangerous than the others, since more opportunity is allowed for imprisoning portions of the intestines and so interfering with their circulation and causing extensive gangrenous and inflammatory processes.

Frequency of the Persistence of Diverticula.—Meckel's diverticula are present in $1\frac{1}{2}$ to $2\frac{1}{2}$ per cent. of all bodies. In 2,400 bodies examined at St. Bartholomew's Hospital, in order to determine this point, Meckel's diverticulum was found in 27 cases. German and French statistics, however, give a higher per cent. than this. The proportion of intestinal obstruction cases that are due to the persistence of Meckel's diverticulum is greater than has been thought. At least six per cent., and perhaps ten per cent., of all cases of obstruction are due to this cause.

Varieties of Pathological Conditions Caused.—Meckel's diverticulum may cause all manner of intestinal obstructive symptoms. On it as a main factor may depend the occurrence of intussusception. The diverticulum itself becomes invaginated in the portion of intestine to which it is attached, and by causing interference with peristaltic movement one portion of gut becomes forced over the other or the paralytic portion becomes invaginated in the part just above it. Meckel's diverticulum has also been found in volvulus of the intestine. At times fecal matter may find its way into Meckel's diverticulum and while delayed there may, as in the case of the appendix, set up inflammatory symptoms with pus production, leading to perforation and, of course, peritonitis. The most frequent form of pathological condition associated with Meckel's diverticulum, however, is its acquisition of adhesions to other portions of intestine and its production of obstruction to the circulation of the small intestine with the well-known symptoms.

Diagnosis of Intestinal Obstruction.—Halsted, in an article on intestinal obstruction, says that, if possible, the variety of obstruction should be diagnosed as the prognosis, and the probable course of the case is not a little influenced by this consideration. As a rule, however, the best advice for obstruction cases is to operate as soon as possible after the diagnosis of obstruction. The less the delay, the more chance for the patient. Even a few hours will make a very serious difference in the prognosis of the case after operation.

Prognosis of Obstruction from Meckel's Diverticulum.—The prognosis of intestinal obstruction due to Meckel's diverticulum is worse than that due to other causes. As a rule this has been set down to the fact that surgeons sometimes divide the band which causes constriction of the intestine without examining what sort of a structure it is and without ligating the cut ends. As Meckel's diverticulum presents as a rule a free opening into the intestine, this leads to leakage of the intestinal contents and, necessarily, to peritonitis and death. Unless it has been definitely decided that the constricting band is composed only of connective tissues, it is criminal to leave the ends of it untied in such cases. The surgeon must decide for himself what the structure is, or else he must take the precaution to tie both ends of it and in the meantime allow no escape of suspicious material into the peritoneal cavity.

Present Case.—The patient was a boy of three years of age, born in Austria, but two years in this country, with no history of previous attacks or of suspicious symptoms of any interference with the circulation of the intestines. When admitted to the hospital he had been suffering from the condition for three days. He got up in the morning perfectly well, ate his breakfast with a relish and some time afterward began to suffer from pain. In the afternoon vomiting set in. An enema proved effectual, but the symptoms subsided only for a very short time, did not disappear completely, and then began to grow worse again. The vomiting particularly continued and became offensive. During the night fecal vomiting set in, and as another enema gave no relief from symptoms, and the child continued to be in collapse, gradually growing worse, it was brought to the hospital on the third day.

Condition on Admission.—The abdomen was moderately tender, and there was a tumor in the right side, somewhat below the umbilicus and extending over into the right iliac fossa. There was very little temperature, but a weak and rapid pulse. The patient was pale, with a pinched and anxious face and the signs of collapse, due to some severe abdominal affection. No peristaltic waves could be seen on the abdomen, nor

could the outlines of the intestines be made out. There was very little to suggest intestinal obstruction, except the fecal vomiting. Accordingly, the diagnosis was left undecided between some form of intestinal obstruction and appendicitis.

Operation.—When the abdomen was opened, some distended injected coils of intestine immediately appeared in the wound. Some of the coils of intestine were adherent to each other, and after a short time the obstructed portion was found and it was noted that gangrene had already begun. The gangrenous portion was resected, the patient was stimulated by amounts of hot saline solution poured into the abdomen, several quarts of which was allowed to remain when the abdominal wound was closed, but reaction did not take place, and the patient died some three hours after the operation.

In answer to a question, Dr. Wilson said that the pain was more localized in the right iliac region than anywhere else, but was much more diffuse than is usually the case in appendicitis. In cases of intestinal obstruction pain is always more complained of at first than later on. As a rule the pain of intestinal obstruction is apt to occur at the level of the umbilicus, or in the upper quadrants of the abdomen rather than in the lower.

Papilloma of Bladder.—Dr. Follen Cabot presented a specimen of tumor that had been passed by a patient who has been suffering for over a year from an occasional slight amount of blood in his urine. The man has a good family history and never had any previous difficulty in his urinary tract. Fifteen months ago he noted a little blood at the end of urination. This recurred after several weeks, but was not large in amount and produced no special inconvenience. About three months ago blood began to appear after urination quite frequently, at least three or four times a week. There was never any pain associated with it. Occasionally during the last few months portions of filamentous tissues have appeared in the urine. These are evidently the finger-like projections of a villous growth of the mucous membrane of the bladder.

Cystoscopic Examination.—It was not hard to make a cystoscopic examination, though the bladder had to be washed out rather carefully in order to secure a field free from blood, as the irritation caused considerable bleeding from the tumor. The papillomatous growth of the bladder wall was found situated near the neck of the bladder and involving somewhat the trigone. So far there have been no general symptoms. The bleeding is not sufficient to cause any anemia, and the question that occurred is whether operation for the radical removal of the tumor should be recommended or not. Up to this time at least it has no tendency to malignancy, as seems clear from the fact that no constitutional symptoms have occurred. Operation in these cases is not easy and cannot always be depended on to give a radical cure. Dr. Cabot saw a patient at the Presbyterian Hospital with a history of having had some symptoms of the presence of such a growth for twenty years. Finally, because of the amount of bleeding, operation was done. Some months after the operation, however, the bleeding became even more alarming than before, and then the man lost weight and became cachectic and, as the result of malignant degeneration, a fatal issue ensued. In this case operation seemed to have hastened the conversion of a benign tumor into a malignant growth.

Dr. Spooner said that a patient with a tumor of this kind had been under observation for 25 years at the dispensary at the Massachusetts General Hospital in Boston. While considerable bleeding had taken place no other serious symptom had developed. It seems

advisable, in these cases, to wait until some urgent symptoms develop before undertaking extensive radical operation.

Small Tumor, Immense Hemorrhage.—Dr. Ramon Guiteras related the case of a patient who came under his observation about a year ago. The patient was suffering from some hematuria and pyuria, which he attributed to an attack of gonorrhea he suffered from the year before. This had been complicated by an attack of epididymitis. Eight months before the patient came under observation he noticed a little blood in his urine, or rather just after the end of urination. At the end of about a week this occurred again. Then it began to occur more frequently and finally became quite profuse and occurred after every urination. When the urine was allowed to stand there was a layer of clear urine above, then a whitish sediment, and then a red sediment, evidently due to the blood below. There were no casts present in the urine and the cellular elements found after centrifugation were typical bladder epithelium and an absence of kidney elements.

Cystoscopic Examination Negative.—When a cystoscopic examination was undertaken it was a long time before the field of vision could be made clear, there being a constant tendency for it to become obscured in the presence of blood. Eventually the trigone was found to be clear, but a good view of the rest of the bladder could not be obtained even after many trials. It seemed almost sure that the patient was suffering from a tumor of the bladder, and as the hemorrhages had been very severe so that the patient was almost exsanguinated, it was thought that the tumor must be large. Operation was therefore advised and was accepted by the patient and the family physician as the only recourse under the circumstances, if the patient's general health was not to suffer seriously from the loss of blood. For the same reason delay in the operation was advised against.

Extremely Small Tumor.—A suprapubic cystotomy was performed, and when the bladder was opened there was a gush of blood. After careful hemostatic precautions, this was stopped. The most careful examination of the interior of the bladder failed to show any tumor, and as the family physician was leaning over the operator's shoulder it was a rather embarrassing moment. The urine from the kidneys on both sides was seen to be perfectly clear, so that there could be no thought of renal hematuria and pyuria to explain the blood after urination. Directly in the line of incision into the bladder tissues, a small portion on each side, was a minute tab of tissue that had been divided by the incision. This seemed to be of the character of an angioma when looked at carefully. It was removed, and its base thoroughly cauterized. It had been larger when the incision was freshly made, but was shriveled up by the hot water applied in order to stop the first gush of bleeding. The wound was sewed up, the man recovered without complications, and no further bleeding was reported. It was a surprise to the operator himself to think that so small a tumor should have occasioned such severe hemorrhage.

Vesical Papilloma.—A patient, recently under Dr. Guiteras' observation, a native of Costa Rica, had suffered for eleven years with occasional hemorrhages. Three months ago he had a severe bleeding from the bladder, which only ceased after the injection of a solution of adrenalin. Since then there have been tendencies to profuse hemorrhages at times. The patient has had no other inconvenience, no pain, no tenderness. Cystoscopic examination showed the presence of a papillomatous growth of the bladder with finger-like projections. A number of these projections showed

little red points, evidently the congested areas from which bleeding occasionally took place.

Fibrosis of Bladder.—Dr. Follen Cabot said that in a certain number of reported cases, even though there has been true tumor, intense hemorrhages from the bladder have been reported, and then a condition of fibrotic change of the mucous membrane has been found. This, after being scraped out and cauterized, fails to be the seat of hemorrhage as before, though the operation itself is apt to be accompanied by very severe bleeding. Certainly the size of the tumor has nothing to do with the amount of bleeding that may occur. Large tumors may give rise to very little bleeding and small tumors may cause sufficient bleeding to exsanguinate the patient.

BOOK REVIEWS.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Volume 27, For the Year 1902. Wm. J. Dornan, Printer. Philadelphia.

THE usual most excellent array of papers is to be found in this, the twenty-seventh volume of the transactions of this society. The year has brought forth a keener appreciation of the various problems that have confronted the gynecologist in the past, and many new ideas are brought forward to meet these emergencies.

The Alexander operation for retrodisplacement of the uterus finds a most ardent supporter in the person of Dr. Clement Cleveland and he seems to find but few limitations to its use. The classic objections to it are very cleverly set aside by him and one is almost convinced that he alone is in the right. This author condemns the operation on the round ligaments through the vagina in unmarried women.

Dr. J. Riddle Goffe, the leading exponent of the vaginal operation for the shortening of the round ligament has a most excellent paper on the uniform good results that he is able to obtain by this method of procedure in the same condition.

Dr. Robert A. Murray of New York is an ardent advocate of Cesarean section in almost all cases of placenta previa, regarding it preferable to version and other methods, as celiotomy has now reached that degree of safety that it can almost be performed with impunity.

A paper of much interest was read by Dr. Reuben Peterson, on Ovarian Fibromata, being a critical review of eighty-four cases selected from recent literature. Dr. Philander A. Harris shows a very clever method whereby old suppurating wounds of the abdominal walls may be resutured. Dr. Geo. A. Noble, of Atlanta, Ga., advances a new operation for the repair of complete tears of the perineum, designed for the purpose of eliminating danger of infection from the rectum. Many other excellent papers are included in the book, but space does not permit of a review of their nature.

At the end of the volume is appended a memorial tribute to Dr. Paul F. Mundé. This is written by Dr. Matthew D. Mann, of Buffalo, N. Y.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Vol. III, The Eye, Ear, Nose and Throat, Edited by CASEY A. WOOD, C.M., M.D.; ALBERT H. ANDREWS, M.D.; T. MELVILLE HARDIE, A.M., M.D., December, 1902. The Year Book Publishers, Chicago.

THIS volume of the Practical Medicine Year Books maintains the reputation of previous numbers of the series. It contains an excellent review of the recent

literature of the special subjects of the eye, ear, nose and throat; the names of the editors being sufficient guarantee that the work is well done. In the chapters on the eye, the subjects of toxic amblyopia and of the affections of the ocular muscles are especially well treated. Under the ear the affections of the middle ear and of mastoid disease contain many practical points, most of them recent and suggestive of practical value. This series of books is making a distinct place for itself in present-day medicine.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Prof. DR. CARL VON NOORDEN, Senior Physician to the City Hospital in Frankfurt a. M. Authorized American Edition. Part I, Obesity. The Indications for Reduction Cures. E. B. Treat & Co., New York.

PROFESSOR VON NOORDEN is so distinguished an authority with regard to disturbances of metabolism and nutrition as to make it needless to say that this book is the last word on an interesting subject. Even Professor von Noorden, however, confesses how difficult the matter of reduction becomes in certain cases. He refers particularly to the tendency in women to the accumulation of fat in the abdominal walls and in the mesentery and how easy it is for a reduction cure to affect the fat in all other parts of the body and leave this more or less undisturbed. Of course the main object of taking the cure in most cases is the reduction of the girth of the abdomen. The book is well worth the reading and is recommended to specialists in the subject.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Vol. II, General Surgery. Edited by JOHN B. MURPHY, M.D., Professor of Surgery, Northwestern University Medical School, November, 1902. The Year Book Publishers, Chicago.

THE present volume of the Practical Medicine Series of Year Books, in response to the request from many sources, is much larger than the usual volumes, containing some 550 pages, with an excellent index. The enlargement is in response to requests for more detailed reviews of the articles presented and this volume in most respects may be said to make unnecessary the reading of an immense amount of literature, much of it in foreign languages. Dr. Murphy, in the introduction to the book, insists very much on the danger of delay in serious surgical cases. He suggests that middle meningeal hemorrhages are not treated until their permanent or fatal damage is accomplished. Peritonitis is still unoperated until fatal desquamation, or blistering of the peritoneum has taken place. He asks very pertinently, When will the medical profession realize that the loss of a life by omission is as grave as the loss of a life by commission?

Books like the present one are apt to keep the general practitioner up to date, so that he realizes the possibilities of danger in cases that might otherwise seem to admit of delay. The chapters with regard to the intra-abdominal diseases are especially informing in this respect, and of these, as might be expected under Dr. Murphy's direction, the important and progressive chapter of the diseases of the liver and gall-bladder is particularly commendable.

GUY'S HOSPITAL REPORTS. Edited by J. H. BRYANT, M.D., and F. J. STEWARD, M.S. Being Vol. XLII of the Third Series. J. & A. Churchill, London.

Guy's Hospital Reports always contain some characteristically interesting and practical material. Some of the valuable articles this time are on the Pathology of Acute Rheumatoid Arthritis, by Dr. W. Hale White,

who describes three forms of this disease; A Research upon the Metabolism of a Patient Suffering from Diabetes and Syphilis, following upon Fracture of the Skull, by Drs. Butler and French, and papers On The Importance of Strong Abdominal Muscles, on the Gelatin Treatment of Aneurism, and on Heat Stroke, with a supplementary paper on the effect of Muscular Work upon the Temperature of Man. All of these papers have a certain clinical value and the original work involved is of a high order. Americans working along related lines must consult the book if they do not care to run the risk of missing very suggestive material.

THE INTERNATIONAL TEXT-BOOK OF SURGERY. By British and American authors. Edited by J. COLLINS WARREN, M.D., LL.D., Hon.F.R.C.S., Eng.; Professor of Surgery in Harvard Medical School; Surgeon to the Massachusetts General Hospital, and A. PEARCE GOULD, M.S., F.R.C.S., Surgeon to Middlesex Hospital; Lecturer on Surgery, Middlesex Hospital Medical School; Second Edition. Vol. I. General and Operative Surgery. Vol. II. Regional Surgery. W. B. Saunders & Company, Philadelphia and London.

The prompt appearance of a second edition of this work vouches for a degree of popularity which it requires only a cursory examination of the volume to understand. The junction of American and British editors serves to give the work truly an international stamp and the eminence of the contributors selected by them places the value of their writings beyond peradventure. When such names as those of Abbe, Bull, McBurney, McCosh, Warren, Gould, Cheyne and Mayo Robson, to mention a few, are found on the title page no great argument is necessary to establish the excellence of a treatise so sponsored, and this will no doubt remain a standard reference and text-book for years to come. While books on the subject of surgery are per se more apt to require frequent revisions than those on other branches of the art owing to the constant advances made, the last few years have been especially productive of new material, for the Spanish American and South African wars have afforded many opportunities for the practical demonstration of what had previously been more or less theoretical. The results of these have all been incorporated in this edition and the use of the Roentgen ray, the effect on the human body of various kinds of bullets, the results of surgery in the field and many other matters pertaining to military and naval surgery are all treated in the light of the experience gained in the events of the immediate past and the selections on these topics will be found among the most interesting in the book.

The plan of the work is too much like that of most text-books to require especial comment, but the various sections have been assigned to authors whose experience renders their writings instructive to a degree never to be approached in a "one-man book." The chapters on bacteriology and the blood are particularly useful as well as the one on anesthesia in which the latest apparatus, such as the Bennett gas and ether inhaler and Fillebrown's inhaler for nose and throat work are described. Other sections that show the modernness of the work are those on phototherapy, the Roentgen ray and Roentgen-ray dermatitis. The dry operation for the reduction of congenital dislocation of the hip according to the methods of Lorenz is well described, though we have not been able to find any mention of Stimson's method of reducing traumatic dislocations by the continuous pull of heavy weights. A chapter of especial interest is that devoted to the "Influence of Age and

Race in Surgical Affections," in which, among others, the popular belief in the immunity of the negress to ovarian cyst is shown to be erroneous. Another section to which present developments give an added value is that on "Surgery and Surgical Operations in the Tropics," in which the diseases to be encountered and the conditions under which work must be done in our new possessions are discussed.

The illustrations throughout are of the highest order and apparently, without exception, are original, so that the conventional figures which have done duty since the days of Gross and Ashurst are conspicuous by their absence. Indeed, so distinctive is the mechanical make-up of the volumes that the International Text-book may be said to have set a new standard in the production of medical books.

DIRECTIONS FOR LABORATORY WORK AND PHYSIOLOGICAL CHEMISTRY. By HOLMES C. JACKSON, Ph.D., Instructor in Physiological Chemistry in the University and Bellevue Hospital Medical College. John Wiley & Sons, New York.

This book is intended as a guide to students of physiological chemistry. As such it is, we believe, exceedingly well adapted to the work in hand. The experiments have been chosen with good judgment and are well adapted to the bringing out of the essentials that every medical student should have as a foundation for his work in the subsequent study of the perverted metabolism of the human body seen as a practitioner.

While such works often seem unnecessary to the general book reviewer, we believe that they serve a very useful function if they have been constructed with due attention as has the volume under consideration to the future needs of the future medical practitioner.

INORGANIC CHEMISTRY SYLLABUS. By H. C. CAREL, B.S., Assistant Professor in the University of Minnesota. Third Edition. H. H. Wilson, Minneapolis.

This short syllabus of 180 pages is built on much similar lines to other works of the kind. There is nothing distinctive about it and it no doubt fulfills a useful and worthy function in the home of its adoption.

BOOKS RECEIVED.

The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.

REPORT OF THE HEALTH OFFICER OF THE DISTRICT OF COLUMBIA. 1902. 8vo, 275 pages. Illustrated. Washington.

VIBRATORY STIMULATION. By Dr. M. F. Pilgrim. 12mo, 152 pages. Illustrated. Metropolitan Publishing Co. New York.

DISEASES OF THE STOMACH. By Dr. Max Einhorn. Third edition. 8vo, 534 pages. Illustrated. Wm. Wood & Co. New York.

DISEASES OF METABOLISM AND NUTRITION. By Dr. Carl von Noorden. Part III. 12mo, 64 pages. E. B. Treat & Co. New York.

AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. By Drs. E. L. Keyes and E. L. Keyes, Jr. Octavo, 826 pages. W. B. Saunders. New York, Philadelphia and London.

SURGICAL DISEASES OF THE GENITO-URINARY ORGANS. By Drs. E. L. Keyes and E. L. Keyes, Jr. Octavo, 826 pages. Illustrated. D. Appleton & Co., New York and London.